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DIRECTOR OF THE SURGICAL UNIT, ST. THOMAS'S HOSPITAL; SURGEON TO VICTORIA HOSPITAL FOR CHILDREN; CONSULTING SURGEON TO METROPOLITAN POLICE

IT is only during the past ten years or so that surgery has taken an active part in the treatment of chronic non-tuberculous arthritis, a condition generally termed in England osteo-arthritis. The process is essentially a chronic one and is induced by various factors by no means always ascertainable. On this account, especially in its early stages, the physician, physicotherapeutist, or often the quack apply different remedies according to their individual convictions in an attempt to control the disease. With the development of asepsis and the stimulus given by radiology—both by its provision of more exact diagnosis of the joint condition and its assistance in the checking of operative procedures, surgery has gradually taken a greater share in treating advanced cases.

In dealing with the disease in its localised form operative measures have achieved a considerable success, but it cannot be said yet that opinion is unanimous as to the methods which should be applied to one of the major weight-bearing joints, the hip. I propose therefore to investigate this problem with the help of the literature and the analysis of a group of some 100 cases upon which I have operated during the past fifteen years.

Pathology

It may be well in the first place to make an attempt to define the nature and development of the various conditions met with in the pathological rubbish heap called chronic arthritis. There is much confusion in the nomenclature of the subject which may be accepted as an index of our ignorance of the exact pathology of the various conditions concerned. The term osteo-arthritis is in this country applied to joint conditions in which the final morbid anatomy is easily recognisable. On the Continent the term arthritis deformans is more often employed in the same sense, and American authors generally classify the condition under the general term chronic non-specific arthritis, subdividing it into proliferative, degenerative, and atrophic groups.

The factors which are recognised as associated with the development of the disease may be tabulated as follows:—

LOCAL CAUSES

1. Previous trauma—old fractures, particularly those involving the articular surface.
2. Nutritional diseases of bone in childhood—Perthes and perhaps slipped epiphysis.
3. Congenital deformities and dislocations.
4. Upsets in the blood-supply to the articular area—osteochondritis dissecans.
5. Subacute infection of the joint.

GENERAL CAUSES

1. Circulation in the blood stream of toxic materials derived from closed septic foci or the intestinal tract.
2. Interference with the nerve-supply to the articular surfaces.

EXPERIMENTAL EVIDENCE

The determining causes which initiate the pathological sequence—partly degenerative and partly proliferative—which lead to the progressive joint changes, are not yet fully understood; and it must be admitted that many different conditions and processes may lead to joint changes which are indistinguishable in their final form.

Generalising our views on the subject, it may be said that given a hip-joint in which the nutrition of the joint surfaces has been upset by epiphyseal disease, trauma, or infection, some undetermined factor may initiate the slowly progressive changes which we recognise as osteo-arthritis. The factor may be a circulating toxin developed in an infective focus; it may be some chemical produced as a result of some upset in metabolism or endocrine disturbance.

The ultimate condition of the hip which we classify as osteo-arthritis is characterised by the absorption of the articular cartilage, the secondary sclerosis of the underlying bone associated with the formation of cysts together with marginal hypertrophy. Hypertrophy of the synovial membrane, small-celled infiltration of the capsule of the joint, and fibrosis of the surrounding muscles occur in varying degrees, and it is often impossible to say how far these conditions are secondary to the progressive disintegration of the joint, or how far they represent the first step on the downward path. The changes may be predominantly in one joint and the hip is particularly prone to be the one involved, but a slighter grade of the same condition can generally be observed in other joints in the same patient. In some cases the nervous supply of the joint, either sensory or sympathetic, is at fault. Eloesser[1] has proved experimentally that anæsthesia produced in a limb by the section of the posterior nerve-roots does not itself produce the changes of osteo-arthritis in the affected limbs, but that such changes are initiated by trauma.

I may here refer to *rheumatoid arthritis*, which in its inception is essentially polyarthritic and associated with the phenomena of a subacute infective process. In its typical form it runs its course over several years generally leaving the patient severely crippled. In this final stage the joints may be dealt with surgically, though the multiplicity of the lesions is a great handicap to success. There are borderline cases between this infective condition and osteo-arthritis which are generally classified under the term atrophic arthritis. A certain number of these cases have been operated on and included in the series reviewed later.

Surgical aid in the form of positional treatment and the provision of apparatus for the protection of the joint have their place in quite early stages of the disease. Major operations will usually only be undertaken on the account of the presence of the two clear indications, pain referred to the joint and disabling deformity, either alone or in association. In certain cases—e.g., ankylosis or stiffness of both hips may justify a surgical attempt to restore movement.

Before deciding on the surgical treatment in any individual case, an attempt should be made to localise the source of the pain as it may have considerable influence on the choice of method.

* A Hunterian lecture delivered before the Royal College of Surgeons of England on Feb. 8th, 1935.

ANALYSIS OF PAIN

The pain of arthritis may be due to irritation of the nerves underlying the articular cartilage. This pain is most in evidence in the early stages of the disease, and I think passes off when the articular cartilage has been completely eroded and the underlying bone has become sclerosed. It would appear that in the stage of erosion of the hip cartilage pain is often referred to the knee. Pain from the joint capsule is present when there is infiltration of the capsule with exudate or stretching of it from progressive displacement of the femoral head. Muscle pain is noticeable when there is much deformity associated with spasm, and is seldom entirely absent till the joint is stabilised either from a termination of active disease or by the immobilisation of the joint. Various degrees of sciatica are common, and in the more severe cases may be due to a definite neuritis. The sciatic pain is, however, usually regarded as due to referred pain from the hip-joint.

It may be noted that the degree of pain is not determinable by reference to the bony deformity. One sees cases of bilateral hypertrophic arthritis of both hips in which one joint is practically painless and the other joint, showing a similar radiogram, acutely painful. Again, capsular or muscular pain may be present in instances in which the joint surfaces are radiologically not far from normal.

In actual practice a clear recognition of the origin of the pain is often only possible by means of trial and error in methods of treatment, but if the evidence is at all clear it may help in deciding what physical or surgical procedure may be most effective in giving relief. It is assumed that physicotherapeutic measures have been tried and proved ineffective before the surgeon is called in. Of these measures the one which has given the most noteworthy results is deep X ray therapy. The application of this agent is fairly recent, and its action in relation to these cases is not understood, but its efficiency in a percentage of cases is striking. Dausset and Lucy [2] quote the results they have obtained in 50 cases and state a definite improvement was observed in half of the patients treated, and that the improvement continued for periods up to two years. They are not able to define the joint conditions which determine the success or failure of the method. Watt [3] reports an even higher percentage of satisfactory results from this method of treatment in early cases of arthritis. His conclusions are not based only on hip-joint, but he states that the results in long-standing cases are less satisfactory.

DEFORMITY

The deformity constantly observed in this disease is flexion and adduction of the thigh. It may be caused by muscle spasm, but occasionally is assisted in its development by subluxation of the joint. Secondary lordosis and lateral curve of the spine are produced when the patient assumes the erect attitude. The strain so imposed on the sacro-iliac and lumbar spine joints may be the source of pain apart from any arthritic change in these joints.

Surgical Methods

I will now consider the various types of surgical treatment which are at present in vogue.

Procedures directed to correct malposition of the joint, which develops in the course of the disease and which may be the source of pain as well as disability, may be referred to as coming under the classification of surgical treatment. Under this heading come manipulation of the joint and stretching of the adductors, associated or not with section of their tendons. The limb is then immobilised in plaster for a month or so in the corrected position. Subsequently a weight-relieving calliper may be worn for a few months in order to prevent recurrence of the deformity and as far as possible to save wear and tear of the joint surfaces. The length of time the calliper is worn will usually be determined by the patient, in as far as he finds the relief afforded outweighs the encumbrance of the apparatus.

In Scandinavia Camitz [4] is an advocate of this type of treatment, and he effectually prevents recurrence of adductor deformity by resecting the obturator nerve and part of the pectineus muscle on the affected side. He advocates subsequent fixation for only two weeks and follows this up with a long course of physicotherapeutic treatment.

FIG. 1.—Tracing of radiogram after bifurcation osteotomy of femur (after Hass).

In describing his method he gives details of 7 out of 50 cases operated on during the last ten years, in most of which satisfactory relief of pain and return of function were obtained.

Osteotomy of the neck of the femur is based on the similar idea, that of restoring the natural line of stress to a deformed joint. A simple subtrochanteric osteotomy may be practised or the bifurcative operation (Shanz, Lorenz) carried out. The latter procedure aims at more than reposition of the limb, as by abutting the cut lower end of the femur on the subacetabular rim weight is no longer passed through the hip-joint. (Fig. 1.) Hass [5] is a strong advocate of this latter measure.

The first recorded radical surgical attack on the hip, the seat of osteo-arthritis, was by an excision of the head carried out by H. Foch [6] in 1857. Though further isolated attempts at surgical treatment are recorded, it was not until Albee [7] introduced his arthrodesing operation in 1908 that any material progress was registered in attacking the problem by surgical methods. Albee has used his method in a large number of cases. He later introduced the use of a bone graft in order to secure bony fusion with greater certainty. He is well satisfied with arthrodesis carried out by his methods and has operated on a large number of cases; detailed reports of late results do not appear to be available.

Whitman [8] advocated his reconstruction operation for the relief of the condition in 1925; the aim of this procedure is to obtain a movable joint after removing as far as possible abnormal bone. He pins his faith to this operation for the condition in question.

To judge by the literature, the last five years has seen a great increase in the surgical interest in the treatment of osteo-arthritis of the hip in France. In addition to arthrodesing operations and arthroplastic resections the buttress operation of Lance seems to have gained a considerable vogue. It consists in the establishment of a bony block above the joint to prevent progressive dislocation. The application of this operation would appear to be limited to cases in which subluxation is the prominent factor. It does not attack the joint surfaces and so cannot be expected to bring the disease process to an end.

Another operation of Gallic origin is the recently introduced "forage du col," by Duvernay and

Robertson-Lavalle.[9] The procedure was founded on the idea that the nutrition of the head of the femur is favourably influenced by driving a bone graft into its substance. A track is drilled through the great trochanter into the neck and head of the bone without entering the joint. Some authors drive a graft into the track; others do not. The method has been on trial for only a few years, and it is therefore premature to pass any judgment on it. On the face of it, it would not seem likely to be more than temporarily effective, whatever the basis of its action. Reports on the value of "forage du col" are made by Duvernay,[9] Rocher,[10] Arnaud and Cleret.[11] They are all favourably impressed by the method, but quote only a few recent cases.

Cuneo and Rocher[11] surveyed the whole subject in 1932 without formulating any conclusions at the forty-first Congress of the French Association of Surgeons. Mathieu[12] gives a good account of the surgical position and quotes the results of 18 cases treated in various ways. He states that of 8 attempted arthroplasties the results were good in 6 and unsatisfactory in 2. Tavernier,[11] after a trial of arthroplastic resection in 8 cases, concludes that arthrodesis is to be preferred to any other form of surgical treatment. Roederer and Graffin[13] reserve arthrodesis for exceptional cases and are impressed by the importance and value of positional treatment after osteotomy. The buttress operation is reported on by Masmonteil[11] and others, but the consensus of opinion seems to limit the application to old cases of subluxation of the joint.

Platt[14] discusses the relative value of resection

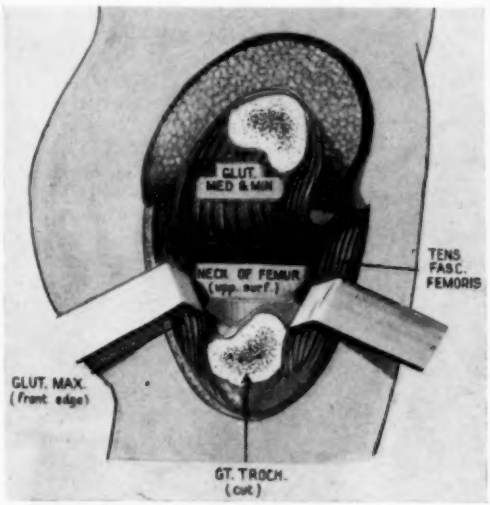

FIG. 2.—Schematic drawing of Murphy approach to the hip-joint, employed in 76 cases. Glut. = glutoreus muscles. Tens. fasc. fem. = tensor fasciæ femoris. Gt. troch. = great trochanter.

of the head and arthrodesis without any detail of case material. He prefers an arthrodesis carried out through a Murphy approach.

The most recent English figures are reported on by Bristow[15] who in an analysis of 67 cases operated on for osteo-arthritis compares the merits of the reconstructive type of operation with arthrodesis. He analyses the results of 33 cases in which some form of arthrodesis was aimed at and of 34 operations for arthroplastic reconstruction. His conclusions favour arthrodesis for young to middle-aged patients in whom only one hip-joint is involved; he would reserve the attempt at arthroplasty for those in whom both hips or their major joints are involved, or for the aged.

The views of German surgeons are perhaps expressed by Burckhardt[16] in a painstaking compilation in the new German Surgery on Arthritis Deformans. He does not favour arthrodesis, but considers that more satisfactory results are obtained by one of the various remodelling operations.

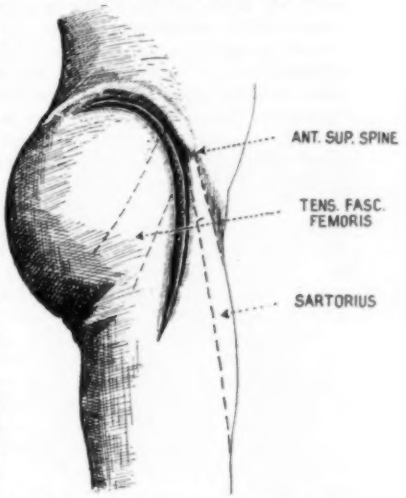

FIG. 3.—Diagram of skin incision for Smith Petersen approach to hip-joint.

Payr[17] considers the outlook in plastic operations on the hip good and states that 60 to 70 per cent. of these operations are successful. In old patients he prefers a saddle or bifurcation osteotomy. He seems to be impressed by the disadvantages of an arthrodesis and with the severity of the operation necessary to gain this end. He emphasises the importance of a mobile spine if an arthrodesis is to be satisfactory.

Bergman[18] records a follow-up of Hildebrand's cases—the only late investigation of any weight which I can find in the German literature. A reconstruction operation had been carried out in all. Three deaths were attributed to the operation. Sixty cases had been operated on in 15 years, mostly aged between 40 and 60.

Of 11 cases reporting 4 were well pleased with the result, 5 said they were worse since the operation. Two of these latter cases were aged 24 and 32.

Of 17 examined 13 were improved and 4 unaltered or worse.

Among the 13 satisfactory cases the functional value of the hip-joint was as follows:—

Bony ankylosis	2
Slight movement	3
Useful movement	8

He states in conclusion that he prefers an arthrodesis for heavy weight-bearers, but prefers arthroplasty for others.

Analysis of Author's Cases

I will now turn to my own experience. During the past fifteen years I have operated on 112 cases for chronic non-tuberculous arthritis of the hip-joint. I propose to consider the late results of these operations. I have limited my investigation to the results of the two radical operations—viz., attempts at arthrodesis, attempts at arthroplasty. All the cases in the series had been subjected to longer or shorter courses of physicotherapy, and many to minor surgical interventions before radical operation was undertaken, but I am not in a position to consider the results of these procedures. Seventeen cases have been operated on since July, 1932, and I have considered the intervening period too short to render

the end-results of any value, and so they have not been included in the Table.

An exact definition of the nature of the joint changes in the group investigated is not possible. Nearly all cases were advanced examples of osteo-arthritis and, as has been pointed out above, the recognisable pathology in the final state is the same whatever factors may have initiated the primary change. In the table giving details of the individual case it is stated whether the condition for which operation was undertaken was a hypertrophied or atrophic arthritis, and whether subluxation was present and how far the disease was monarticular.

The approach to the hip-joint employed in each case is stated in the main table. One of two recognised approaches have generally been used—viz., either based on Murphy's method (76 cases) or on the Smith Petersen [19] (15 cases). Irregular approaches were used five times. The Murphy approach has been employed exclusively when a reconstructive operation was carried out. The vertical part of this incision has only been made when the great trochanter has been planted below its normal situation. The approaches are sufficiently well known to render it unnecessary to describe them in detail. The Figs. 2, 3, and 4 delineate their essential features.

OPERATIONS AIMING AT ARTHRODESIS

In attempting an arthrodesis the joint has normally been dislocated—posteriorly after the Murphy approach, anteriorly after the Smith Petersen. The surface of the head of the femur has then been cut away till a shaped head of apparently healthy and vascular bone is left. The upper sector of the acetabular roof is next cut away with a large gouge. This is the only difficult part of the operation; it is by no means easy to expose well the vascularised bone in the acetabulum without destroying the shape of the cavity. The head of the femur is then replaced in the socket, a formal extra-articular iliac graft is only used exceptionally. The great trochanter is fixed back in place by suture or a fine wire nail, and the wound resutured.

After-treatment.—The patient is fixed in a plaster-of-Paris spica with the thigh in the position in which fixation is desired. This is usually 25 per cent. flexed, slightly abducted, and externally rotated. Tenotomy of the adductors is carried out if spasm opposes the maintenance of this position. The plaster spica has not been extended to the chest. It relies for control of pelvic movement upon its extension to the upper half of the sound thigh with a well-defined grip of the tuber ischii on the sound side. In old patients I am sure that this type of spica is better tolerated than one fixing the lower part of the chest and so enforcing complete recumbency. The spica is maintained in position for about two and a half months. The plaster is often changed about three weeks after operation. Two to three months after operation a short spica is applied and the patient started to walk with crutches. Patients are left free of any splint not later than the fourth month, after which general physicotherapeutic measures are applied to restore function and mobility of the normal joints.

OPERATIONS AIMING AT A MOBILE JOINT

After exposing the joint by the Murphy route the head is dislocated backwards. The ileo-femoral ligament is thus left intact. The head of the femur is cut off and the stump pared down so as to leave a rounded end of healthy bone which fits the acetabulum loosely. The acetabulum is not touched. Free fascia has been used in a few cases to cap the bone, but latterly I have limited myself to waxing the raw surface of the femoral neck. After replacement of the stump in the acetabulum the great trochanter is pinned back on the shaft of the femur about 1 in. below its original situation on to a prepared raw bone bed. This operation can be performed with sufficient precision in about twenty minutes.

After-treatment.—Many cases have been fixed in a plaster spica for two or three weeks after operation as it has been found easier to nurse them when so fixed. At the end of the period they are transferred to a Hodgen splint to which weight traction of 5 to 10 lb. is applied for a few weeks. After this the patient usually lies free in bed, and is encouraged to move the hip passively with the help of a sling and pulley.

A weight-relieving calliper is sometimes fitted for a few months at about eight weeks after operation. In any case weight-bearing is not allowed till three to four months after operation. Physicotherapeutic treatment is employed about a month after operation.

Results

Ninety-six cases have been investigated for me by my chief assistant, Mr. N. R. Barrett. Nineteen cases were operated on at a Pensions Hospital and have not been followed further than when reported on by me in 1924.[20] The others, with the exception

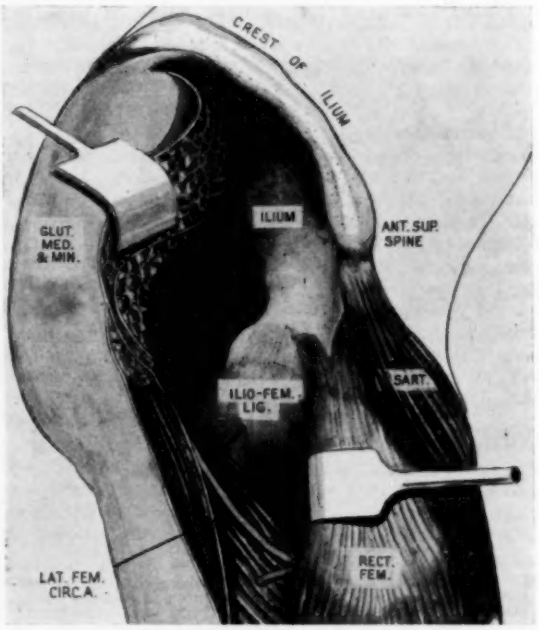

FIG. 4.—Schematic drawing of exposure of the hip-joint by Smith Petersen method, employed in 15 cases. Ilio-fem. lig. = ilio-femoral ligament. Rect. fem. = rectus femoris muscle. Lat. fem. circ. A. = lateral femoral circumflex artery.

of six who could not be traced, have answered a questionnaire or have been examined by N. R. B. and X rayed during the past year. The figures showing the time after operation at which the cases have been examined are:—

Under five years	36 cases.
Over five years and up to fourteen ..	53 ,,

Two deaths occurred while the patients in this series were in hospital. The details are as follows:—

CASE 1.—A man, aged 73, died of cellulitis of the wound which in itself was not very serious. At the post-mortem the patient was found to have evidence of prostatic obstruction with a trabeculated bladder and small fibrous kidneys, and the cause of death was almost certainly uræmia. The blood-urea was not estimated before operation.

CASE 2.—A man, aged 69, who died shortly after operation and at the post-mortem was found to have meningitis. During life he developed post-operatively the clinical signs of tetanus, but the diagnosis was never definitely established.

Age and sex of patients.—The average age of the patients operated on was 51 years. The oldest patient was 73 and the youngest 21. There were 63 males (13 army pensioners) and 33 females.

Complications during convalescence.—Pressure sores from the plaster spica were troublesome in a few cases and sometimes have necessitated the use of a skeleton splint in place of the plaster. Wound hæmatoma was recorded in eight. With careful hæmostasis this should not occur, and I do not think drainage of these wounds is called for. The complication has been less frequent in my later cases since routine ligature of all bleeding points has been carried out. Bleeding from the bone in arthrodesis operations is not usually troublesome, but may be persistent.

Suppuration.—Secondary superficial suppuration in the posterior sector of the Murphy incision is common (ten cases). It does not interfere with the course of treatment. It is not common with a Smith Petersen incision. Deep suppuration is recorded in two cases and, as might be expected from the extent of the wound, is a serious matter. It necessitates transferring the patient to a skeleton splint. This makes positional control difficult. In one case (Case 94) an erysipelas developing three weeks after operation from a hæmatoma sinus led to a mild pyæmic state from which the patient was lucky to escape with his life.

Deep venous thrombosis is recorded nine times. It most often appeared in the left leg whichever side was operated on. It has not, as a rule, interfered with positional treatment, but it impedes the functional return of power in the limb and tends to intensify the post-operative stiffness of the knee on the affected side.

There was no case of severe pulmonary embolism in this series. One case with transient effects is recorded (Case 59).

Chest complications.—In opposition to the generally accepted idea that the elderly patient immobilised in plaster is particularly liable to bronchitis and hypostatic pneumonia this series does not confirm that view. No serious instance of pulmonary complications is recorded. It should be noted that a high plaster spica was never used.

FIGS. 5 and 6.—Radiograms showing sound bony ankylosis.

FIG. 7.—Radiograms showing fibrous joint and subluxation.

Mental complications.—In the middle aged the shock of a big operation followed the sense of helplessness involved by plaster or splint fixation not infrequently leads to some mental upset. Most patients if put in the open and given reasonable doses of alcohol recover their equanimity in a few days. Four cases of mental trouble sufficiently severe to interfere with routine treatment are recorded in this series, but no patient was transferred to a mental hospital.

Interval between operation and restoration of function.—The time taken before the patient derives the maximum benefit varies in individual cases; for instance, there are men in this series who were back at work within eight months of operation and whose hips have stood the test of time very well indeed; there are others who state that they did not really settle down after operation for two years or more. There is no doubt that, provided the operation had relieved the pain, a patient who is able to coöperate will get walking and improve very much more rapidly than one in whom the "spirit is weak." In this connexion it is striking that several of the patients state that they did not really get going until they were discharged from the massage department and until they started to get about in their own homes. It seems therefore that the efforts in the massage and electrical departments should be devoted to overcoming the stiffness in the other joints, especially in the knee on the side of the operation, which stiffness occurs as the result of prolonged fixation in plaster, and also to establishing the efficiency of the muscles around the hip, since these muscles are usually wasted and atrophied, and consequently are inadequate to control the balance of the body, even in

patients where the hip condition is absolutely satisfactory.

ESTIMATE OF LATE RESULTS IN TRACED CASES

Results are divided into good, moderate, and bad. The *good* results are those who clinically are good walkers, without pain elsewhere, and who have been able to get about almost as well as normal individuals. The *moderate* results are those whose local condition is absolutely satisfactory but in whom the result has been spoilt by pain elsewhere, or by some late complication directly connected with the operation; practically everyone of the patients in this series has volunteered the opinion that in spite of the severity of the operation and the long convalescence the operation was worth while. The *bad* results are those who have not been improved at all or who are now worse than before operation.

FIG. 8.—Radiogram showing condition when a fibrous joint was present with "beak" formation above the acetabulum.

FIG. 9.—Radiogram showing condition three months after arthroplastic resection.

FIG. 10.—Radiogram showing condition four years after arthroplastic resection.

RELATIVE VALUE OF THE TWO TYPES OF OPERATION

Arthrodesis has given better results than arthroplasty. It may be noted that in the 69 cases in which a fixed joint was aimed at this was only obtained in 46 cases. In 29 cases checked by X rays true bony ankylosis was only present in 7. The results of these 46 cases are classified as good or moderate with no complete failures. The total of 14 bad results (after either type of operation) all had movable joints. There may be reasons which make the provision of a fixed joint undesirable or impossible, but it seems to me that there is no doubt that the fixed joint is most certain to give sure and lasting success. Operations for bilateral hip disease have proved disappointing (Cases 44 and 65), though the patient may be pleased with the result (Cases 74, 76, 83).

It may be noted here that these authorities who advocate a reconstruction operation do not claim more than about 60 per cent. of successes (Bergmann and Payr). It must be admitted that the successful arthroplasty gives a brilliant result which surpasses in functional value that of the fixed hip, but in operations for the condition under review these bright spots are too few and far between.

Operations (69) *aiming at Arthrodesis*

—	Good.	Moderate.	Bad.
Bony ankylosis proved by X rays	7	—	—
Fibrous ankylosis proved by X rays	18	4	—
Clinical ankylosis (X rays not available after operation)	13	4	—
Movable joint	11	4	8
Totals	49 (70%)	12 (17·4%)	8 (11·6%)

See Figs. 5, 6, 7, and 8.

Operations (19) *aiming at Arthroplasty*

Movable joint	6	4	6
Fixed joint—			
Fibrous ankylosis	1	1	0
Bony ankylosis	—	1	—
Totals	7 (37%)	6 (31·6%)	6

See Figs. 9 and 10.

It may be suggested that with a different technique better results may be obtained. I think this is true of the operations arriving at an arthrodesis, but I am very doubtful whether the same can be said of the reconstructive operations aiming at a movable joint. In my experience, which is confirmed by an analysis of these cases and a study of the literature, it is very difficult to say what technical feature of the operation has produced a good result in any given instance. The most ingenious procedures precisely carried out may result in a stiff or painful hip. A rough reconstructive excision may produce a freely movable joint. I think the fate of these cases depends on the vascular supply of the part and the continued activity or otherwise of those factors which were responsible for the primary bone change.

In the case of an operation to produce arthrodesis of the hip-joint we know that quite apart from after-fixation it is a difficult joint in which to procure bony fusion by a simple rawing of the adjacent articular surfaces of the femur and acetabulum. The addition of an extra-articular graft as first advocated by Albee, adds greatly to the chances of success. If I had employed this technique as a routine my technical and probably clinical successes would have been greater in number. At the same time it should be remembered that the effective cutting and placing of an extra-articular graft in the hip takes time, adds to the shock of the operation, and so the likelihood

ABSTRACT FROM MAIN TABLE

Case No.	Age and sex.	Side	Condition and ætiology.	Operation and approach.	After treatment.	Movement possible in the joint and/or condition of joint by X ray when last seen.	Position and shortening.	(*a*) Pain in hip. (*b*) Pain in other joints.	(*c*) Functional value. (*d*) Opinion of patient.	Time since operation.
38	54 M.	R.	2 years' history of hypertrophic O.A. of R. hip. X ray of hip confirms. X ray of knee shows changes of O.A. on the same leg.	15/5/24: Erasion of joint after dislocation. Murphy approach. R. side.	P.P.S. 2½ months.	X ray 1934: R. hip: Fibrous joint. New laid down above head. Sclerosis of head and acetabulum +. L. hip: Mushroom head. New joint 1″ upon ilium. Gross O.A. 20° of painless flexion right.	Position of both hips normal. 1″ short right. 1½″ short left.	(*a*) None. (*b*) Pain in lumbar spine. X ray 1934: gross O.A. of lumbar spine. Condition of knee has not progressed.	(*c*) Good as regards hip, but somewhat spoilt by lumbar spine, which is getting worse. (*d*) Completely successful as regards pain and walking.	10 y.
44	63 F.	R.	16 years of pain in R. hip and leg. X ray: Hypertrophic O.A. No other joints involved.	16/12/24: S.P. approach. Erasion of joint after dislocation.	P.P.S. 6 weeks.	—	—	(*a*) Pain still present in hip. (*b*) Pain complained of in other hip and in both knees.	(*c*) Poor; pain not cured Cannot walk more than a few yards. (*d*) Op. decidedly worth while.	10 y.
45	49 F.	R.	12 years' of pain in R. hip following an injury. X ray: O.A. hip on right side and O.A. of both knees.	12/2/24: Erasion of joint after dislocation. Murphy approach.	P.P.S. 2 months.	X ray 1934: R. hip: Joint space present sclerosis ++ of both surfaces. Block of bone from ilium above femoral head. Upward dislocation of ¼″. Sound fibrous ankylosis.	Normal. 1″ short.	(*a*) None. (*b*) Pain in R. knee. Condition in this knee has not changed since before op. Also has arthritis of lumbar spine, but does not complain of this.	(*c*) Good; can walk about easily and do household work. (*d*) Excellent.	10 y.
62	59 M.	R. and L.	Pain in both hips and L. shoulder, 4 years. X ray: Hypertrophic O.A. both hips.	19/2/27: Removal of diseased cartilage and remodelling of femoral head. Acetabulum not touched. Murphy approach. L. hip.	Treated on a Hodgen splint.	State to-day: L. hip: Some movement possible in all directions, limited by pain. R. hip: Painless and fixed.	Some adduction and flexion. ¼″ short.	(*a*) Yes. (*b*) None.	(*c*) Poor result; op. has resulted in a painful arthroplasty. (*d*) Op. definitely worth while.	7 y.
65	64 F.	L.	2½ years' of pain in L. hip. Recently similar pains in the other hip and both knees. X ray: O.A. hip, but not of other joints.	16/2/27: Erasion of joint after dislocation. Murphy approach.	P.P.S. 9 weeks.	X ray 1934: L. hip: Very marked beak of bone above the femoral head. Joint space present. Sclerosis ++. R. hip: Similar condition on other side. Not so advanced. Unsound arthroplasty.	Good position. 1″ short.	(*a*) Hip very painful on movement. Movements limited by spasm. (*b*) Spine, R. hip, knees, all painful.	(*c*) Bad result; limited to some extent in movements; foot drop which still remains. (*d*) Op. no good.	7 y.
74	55 M.	R. and L.	Pain and stiffness in both hips for 1 year. X ray: Advanced O.A. of both hips. R.>L.	23/7/29: Whitman's reconstruction of hip on R. side. Murphy approach.	P.P.S. for a few weeks; replaced by Hodgen splint and extension after suppuration.	X ray 1934: R. side: Joint space present. Sclerosis on either side of the joint. New bone laid down in a beak above the neck. L. side: Advanced O.A. with new bone above the neck. Painless pseudarthrosis on side of op. About 25° of flexion possible.	Good position. 1½″ short.	(*a*) None. (*b*) Pain continues in the *other* hip, but X ray does not suggest that bone changes have progressed since op.	(*c*) Excellent on the side of op.; result limited by other hip. (*d*) Op. a success.	5 y.
76	49 F.	R. and L.	9 years' pain and stiffness in both hips. X ray: Hypertrophic O.A. of both hips.	27/2/29: Removal of osteophytes and cartilage from head of femur. Acetabulum not touched. Murphy approach. L. hip.	Thomas's splint with extension by a pin through the os calcis.	Painless pseudarthrosis on L. side. Not much movement possible.	Both sides in good position. About 2″ short on each side.	(*a*) None. (*b*) Both knees stiff and occasionally painful.	(*c*) Moderate. Pain cured but patient cannot get about much, as movement at hips is not sufficiently free. (*d*) Ops. worth while, but disappointed that she cannot get about much.	5 y.
				20/12/29: Same operation as above. Murphy approach. R. hip.	Treatment as above.	Painless pseudarthrosis on R. side. Very little movement. Has some rotary control on this side.				
83	53 F.	R. and L.	22 years' history of O.A. both hips. X rays: Marked O.A. clinically. R. hip painful, L. hip practically fixed.	15/3/30: Head of femur trimmed up. Fascial covering inserted around the head. Murphy approach.	Pearson bed with 7 lb. extension.	X ray 1934: R. hip: Head of femur missing, broad joint space. Sclerosis ++. Sound arthroplasty. L. hip: Typical appearance of old O.A. with beak of bone above the femoral neck.	Good position. Not much shortening.	(*a*) None. (*b*) Pain in other hip occasionally.	(*c*) Moderate. Condition of other hip spoils functional value of op. (*d*) Op. well worth while.	4 y.

In the above Table, Cases 38, 44, 45, 62, 65, 74, 76 and 83 are referred to in the text. The table, which was worked out in order to investigate 96 cases, will be published in full in the 1935 edition of the St. Thomas's Hospital reports.

of post-operative complications. It is sound business in the healthy patient, but I do not think it should be blindly used in less satisfactory risks.

In the results it will be noted that a large number of the patients are left with the limb in an adducted position. I think a more frequent use of tenotomy of the adductors might lead to an improvement in this respect. The use of a Smith Petersen pin to fix the bones after preparing their surfaces is attractive in theory. In practice it is not easy to drive the pin into the iliac buttress. If the pin merely penetrates the central part of the acetabulum its mechanical value is slight.

DISADVANTAGES OF A FIXED HIP

A hip fixed in a good position is little handicap to a patient in the upright position. They can walk with little limp and can carry heavy weights. The comfortable assumption of a sitting posture is dependent on the mobility of the lumbar spine and knee-joint. If both are free the patient can put on his own shoes and stockings but not otherwise. If there is any degree of fixed adduction the condition may be an impediment to normal sexual life in younger women.

A stiff hip implies secondary strain on the knee, sacro-iliac, and lumbar spinal joints. The knee may develop a measure of hyper-extension. The strain in the lumbar area is often responsible for muscular pain in the early convalescent period. In this group of cases it has seldom been persistent. The presence of early osteo-arthritis in other joints does not entirely contra-indicate radical operation on the hip. Cases 38, 45, and 62 illustrate this point. I think the more chronic the disease in the hip the less probable is secondary changes in other joints. When the process is relatively recent and active in several joints it is advisable to defer radical operation.

The advantages of a successful arthroplasty are obvious from the point of view of general convenience. These patients, however, seldom walk without a dropping limp and are not as physically efficient in the upright attitude as the patient with one stiff hip. The freedom of movement obtained is seldom more than 90° of flexion and 15° of abduction.

It would appear from these results that when the disease is limited to one hip-joint and if the physical condition is sound arthrodesis is the operation of choice. A Smith Petersen incision and the application of an iliac graft will be most likely to give the desired result.

When both hips are involved or if the lumbar spine is stiff and the seat of arthritis a remodelling operation should be chosen. The Murphy approach is satisfactory for this purpose. The speed with which this operation can be carried out and the relatively short period of fixation which is required afterwards make it the operation of choice for elderly patients who are bad risks yet in whom intractable pain justifies operation.

In conclusion I think, though I may have suggested that radical surgery applied to osteo-arthritis of the hip is a somewhat laborious affair for the surgeon and certainly a trial of fortitude to the patient; yet the late results are much more consistently satisfactory to the sufferer than one might expect, and fully justify our enterprise.

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(*Continued at foot of next column*)

PYREXIA OF OBSCURE ORIGIN*

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THERE are probably few conditions which bring together the general practitioner and consultant more often than does pyrexia of unknown origin. It holds, also, the major responsibility for shattered reputations and disgruntled relatives. Can any lay person be expected to believe that diagnosis may be quite impossible for several days of fever? The first days of typhoid, paratyphoid, influenza, and even measles may defeat the ablest clinician, who should be wise enough to admit it, rather than to commit himself to a diagnosis just to keep the family quiet. The term "influenza" is the commonest diagnosis of convenience, but it turns upon its creator if followed by the appearance of a rash or signs of a lobar pneumonia.

However, quite apart from the acute fevers whose nature is soon revealed, there exists a host of complaints which may manifest itself for days or weeks only through pyrexia. Now although I suppose every one of us has been baffled more often perhaps than we care to admit in the search for the cause of a pyrexia, it is chastening to remember that the majority of failures are usually due to lack of thoroughness in some routine investigation which does not require extraordinary skill. Of these investigations I put history-taking first of all. When we are considering feverish illnesses with scanty signs our only hope lies in obtaining diagnostic information from the patient. Obvious as this may sound, it can never be too greatly emphasised. As an example, let me quote the case of a doctor whom I saw recently on account of persistent pyrexia.

His history was that on July 21st he had a rigor, vomiting, and a rise of temperature to 102° F. from normal in half an hour. The next day he had frequent rigors, but the vomiting stopped when the bowels had been opened with an enema. On the 24th he felt well, the temperature was normal and he started work again, and even played tennis. The only persistent trouble was constipation. This he treated with castor oil on the 26th. The following day the temperature rose, and on the 29th he had to go to bed again with a temperature of 104°. Since that date until August 2nd, when I saw him, his temperature had fluctuated from 98·4° to 100°. There was general slight abdominal discomfort, no nausea, and a good appetite.

Examination.—Pulse, 72; temperature, 99·2°; tongue, slightly furred. No other physical signs except an opaque left antrum which had been infected as the result

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(*References continued from previous column*)

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of influenza in January. There was complete absence of abdominal tenderness or rigidity. Rectal examination was negative. Agglutination tests for all the common and uncommon food poisoning organisms had already been carried out and were negative, as was also bacteriological examination of the urine. The white count, however, showed 11,000 leucocytes of which 80 per cent. were polymorphs.

Here I must interrupt the history to suggest that enumeration of the white cells is the second investigation of importance in cryptic fever. A leucocytosis with relative and absolute increase of polymorphs at once excludes a large number of causes of obscure fever—e.g., typhoid, paratyphoid, tuberculosis (except occasionally the miliary form), influenza, and malaria. It strongly suggests that one is faced with a hidden area of inflammation due to one of the common pyogenic microbes. It demands daily meticulous examination if a serious outcome is to be averted. Incidentally, leukæmia as a cause of fever may be revealed by the white count only. In the case quoted, the history was all important because the only symptoms, apart from feverishness, were, though vague, yet definitely abdominal. The fresh rise of temperature after taking castor oil again suggests the alimentary tract as the origin of the trouble.

The next day a further complete examination was carried out, and on this occasion a thickening and tenderness could be detected on high rectal examination. In short, the case was simply one of a "pelvic appendicitis" starting with septicæmic symptoms, subsiding, and then relapsing with abscess formation. The history and the white count indicated approximately the seat and type of the inflammation, and consequently gave rise to sufficient apprehension to demand repeated comprehensive examinations until some sign should turn up to settle the diagnosis.

Rectal examination might be added as the third imperative investigation in pyrexia of unknown origin, particularly if there are associated symptoms of abdominal discomfort or diarrhœa. It is often noticed when a pelvic abscess is present that the anus is peculiarly patulous owing to paralysis of the internal sphincter. An abscess in the prostate may be completely overlooked as the cause of fever if this examination be omitted.

Classification

As a somewhat broad classification of perplexing fevers I suggest (1) endocrine, (2) toxic, (3) cerebral, (4) microbial, the last being much the commonest.

ENDOCRINE ORIGIN

The thyroid is the only member of this group which at all frequently gives rise to slight, but persistent, pyrexia without obvious signs. Early Graves's disease in this way resembles chorea, that once it is thought of it can be diagnosed without difficulty. That is to say, its characteristic signs can be *elicited*. But it is not, perhaps, generally recognised that for several months the disease may be accompanied only by a raised temperature—e.g., 99°, trivial loss of weight, and nervousness without tachycardia or appreciable thyroid enlargement. The startled, wide-open eyes may be noticed for a moment as the patient enters the room, and are not revealed again during the consultation. Rise of pulse-rate on slight exertion and tremor can, however, usually be brought out if looked for.

Occasional outbreaks of fever in the grossly obese are puzzling, and suggest a spasmodic effort of the body to consume its strangling deposits. They disappear with reduction of weight.

TOXIC ORIGIN

Under this heading I include a not uncommon cause of pyrexia, namely, degenerating new growths, e.g., fibroids, sarcomata, and carcinomatous metastases in the liver. In the case of malignant growths the patient always looks ill by the time fever is produced, but often one is hard put to it to clinch the diagnosis.

The prolonged though slight fever which so often follows cardiac infarction is presumably another example of the chemical agency of dead tissue. In the days before the clinical picture had been differentiated from that of angina pectoris, the low grade pyrexia was a fruitful source of worry to many of us, though we must be grateful to it in retrospect for having, by its existence, secured for the patient a prolonged rest in bed.

Alcoholic hepatitis is another example of this group. The instances I have encountered have been in stockbrokers or doctors. In no case could the patient be described as a drunkard, yet the daily consumption of whisky, sherry, and often cocktails has amounted to the equivalent of 150 to 300 c.cm. of alcohol. The liver is slightly enlarged and tender; the evening temperature rises to about 99° F. The pyrexia and liver enlargement may disappear after a few weeks of abstention.

The sale of certain "slimming" drugs, notably dinitro-ortho-cresol is, it is to be hoped, to be severely restricted, otherwise these will also provide us with diagnostic difficulties.

CEREBRAL ORIGIN

I am chiefly concerned here with the psychic functions of the brain, leaving the organic disturbances of the thermotaxic centre, as by heat-stroke, hæmorrhage, or tumour, out of consideration owing to their rarity in the absence of some clear history or sign to indicate the nature of the disease. When, however, we come to the "functional" pyrexias we at once enter a large field. My experience is that the vast majority are factitious, but undoubtedly a few are genuine enough, and occur in very nervous subjects. Children who have had much illness are extraordinarily liable to run persistent fever after, for instance, a simple coryza. It may be argued that this is really evidence of poor resistance to infection, but the fact remains that if they be got up and sent about their ordinary life the fever commonly abates in the course of a day. I have seen a steady pyrexial swing of 98° to 99·2° develop in a neurotic woman after she was diagnosed by an Abrams's box expert as suffering from "streptococci." It lasted five weeks and was said to be cured by percussion of the seventh cervical spine by a chiropractor.

The tricks for the production of pyrexia by the malingerer are legion, most of them being ingenuous. Fortunately, these patients often reveal themselves by feigning extreme exhaustion. They lie prostrate and supposedly semi-stuporose. One's suspicions are aroused by the sight of a well-nourished woman with normal pulse, no physical signs of disease, obstinately closed eyes, and a temperature chart showing fever of several weeks' duration. In every case of this sort the doctor should take the rectal temperature himself, and keep his hand on the thermometer the whole time. If the patient is protecting herself with a semblance of lethargy or semi-consciousness, it often pays to whisper to the attendant nurse. I have not yet met an hysterical or malingering subject whose curiosity could resist such a bait. One notices the head turn ever so

little, enough to favour one ear, and the eyelids part just a fraction, so that the whisperers shall be observed. Hysterical stupor, feigned meningitis, and what not can be caught out this way, but there are unfortunately some who are much more versed in the art of being sick.

Once satisfied that the patient is a malingerer, it is, I find, better to deal with her alone. Any audience will produce stubborn resistance. I generally say straight out that I am not in the least impressed by the performance, but that if the patient will start recovering within 24 hours, I will not give her away to her relatives, and will let them assume that whatever disease has been suggested is now passing off. This subterfuge is justified, because no patient can face exposure and will most obstinately go on shamming unless protected by the doctor. One must as it were give her a decent method of escape from the position she has assumed, with the alternative of brutal exposure if she fails to coöperate.

MICROBIAL ORIGIN

Microbic diseases provide us with far and away the largest selection of puzzling cases of fever. The instance which I find has occurred most often in my experience is *infective endocarditis*. The subacute bacterial type is notoriously difficult to diagnose, for the onset is very insidious and the signs slight. The most helpful points are the sickly complexion of the patient (it has been described as café-au-lait), shortness of breath, an invariably raised pulse-rate, slight albuminuria, and the finding of red cells in the urine on microscopic examination. There is almost always an old and recognised rheumatic valvular lesion to assist one, but such diagnostic signs as Osler's nodes, enlarged spleen, clubbed fingers, petechial hæmorrhages, and positive blood culture have often to be awaited for many weeks. Even more frequently I have been consulted on account of fever due to the more fulminant, malignant, or ulcerative type of endocarditis. The reasons for the nature of the disease being overlooked are (1) familiarity with and consequent disregard of the existing valve (usually aortic) lesion; (2) the occurrence of pains in the limbs, which are assumed to be those of a fresh attack of acute rheumatism. Most cases, however, arise in middle life, when recurrence of true rheumatism is uncommon. Again the obvious severe illness of the patient, the pallor, loud murmurs, and sweating should direct attention to the skin, spleen, and urine for evidence of embolism and to the fingers for the early changes of clubbing.

Staphylococcal fever comes high in the list, for it may produce a symptomless fever apart from the usual discomfort of a swinging temperature. Here undoubtedly the most helpful points are (1) leucocytosis of about 12,000 with a relative increase of polymorphs, and (2) a slow pulse in relation to the temperature—e.g., temperature 101° F., pulse 76 to 84. The first point excludes the typhoid group, and suggests pyogenic infection. The staphylococcus is the only common organism to produce such a pulse-temperature ratio. A history of a boil a week or two previously is usually forthcoming, but only if inquiry is made. The development of perinephric abscess as a result of a secondary renal cortical abscess is a common sequel, but it may be symptomless for two or three weeks, or it may give rise to pain referred to the right iliac fossa and lead to operation for appendicitis. The earliest sign may be a gradual rising of the diaphragm on the affected side, with restricted lung excursion; but more often a slight fullness of the loin can be detected if the back be observed from above with the patient sitting forwards. Once the condition is suspected, the loin will, of course, be repeatedly examined for tenderness, and it may be observed also that the patient prefers to keep the thigh on the affected side flexed. It is not fully appreciated that in most cases of so-called perinephric abscess the lesion starts in the kidney and, therefore, the *Staphylococcus aureus* is often to be cultivated from the urine. Residual metastatic abscesses may often perpetuate fever even though the main area of sepsis has been drained. For instance, the prostate, bone, or even muscle may harbour such a focus which may be symptomless until palpated.

Even now we have not exhausted the various revelations of an underlying staphylococcal septicæmia. For instance, I have met two cases of repeated hæmoptysis, wasting, and fever, both originally diagnosed as tuberculosis, and yet proving to be due to staphylococcal lung emboli. In the one case the origin of the infection was eventually traced to the tonsils from which a pure growth of *Staph. aureus* was cultivated; in the other an old gunshot wound of the thigh formed the site of original infection. The value of a leucocytic count in both cannot be over-emphasised.

Streptococcal septicæmia is far less commonly a source of diagnostic difficulty because there is an initial acute inflammation at the portal of entry; usually the throat.

Food infections come high in this series. By these I mean not only typhoid and paratyphoid fevers, but also diseases arising from associated organisms of the salmonella group and of abortus fever. Headache, dirty tongue, diarrhœa or constipation, pyrexia of 100° to 103° F., nausea and often vomiting may be the symptoms, but diagnosis is extremely difficult. Once again a leucocyte count is of great value, for a leucopenia, or at least absence of leucocytosis, in association with such symptoms and high temperatures is very suggestive of one of the food poisoning organisms. Early bacteriological examination of the stools and urine is always advisable. After a week it is unlikely to be fruitful, but soon after this agglutination reactions develop and may in fact be the sole means of clinching the diagnosis. I have been impressed by the frequency of the *Bacillus aertrycke* in these cases. It should be borne in mind that recent T.A.B. inoculation does not exclude the possibility of typhoid fever. Only a few months ago I saw a lady with signs very suggestive of typhoid who had received full protective inoculation five weeks prior to her being infected in the East. The agglutination reactions were temporarily dismissed on the assumption that the vaccine was responsible for them. A few days later rose spots and pea-soup stools pointed unhesitatingly to the diagnosis which was confirmed by a rising titre and falling white count.

Pulmonary tuberculosis does not feature very largely in this series because slight fever with loss of weight and appetite rarely fails nowadays to lead to X ray investigation. Nevertheless, one of the most puzzling cases I have met was presented by a young woman who proved to have a small cavity in the right lung with no surrounding infiltration. Her symptoms were attacks of fever (temp. 100° F.) lasting for 8 to 16 hours. The attacks occurred about once a month and were ushered in by shivering. There was slight loss of weight but no cough. The only physical sign was diminution of movement of the right side of the chest. Presumably these remarkable outbreaks were due to temporary plugging of the

bronchial exit of the cavity. Recovery followed the induction of a pneumothorax.

Tuberculous glands in the mesentery are, on the other hand, often overlooked for the very good reason that they may give no definite signs. Here again history is all important. Attacks of shooting right-sided pain, intermittent malaise and loss of appetite, slight loss of weight and particularly loss of vigour are all suggestive. In an attack, localised tenderness is always present and the stools may be pale. In patients over 10 years of age an X ray quite commonly reveals areas of calcification in the right iliac fossa.

Bacillus coli infection of the urinary tract and of the gall-bladder causes a great amount of chronic ill-health and irregular fever. The urinary infection is seldom overlooked except in infants in whom it may cause high fever and vomiting. On the other hand, chronic cholecystitis is probably one of the commonest causes of low grade recurrent pyrexia. It is usually associated with flatulent dyspepsia, but tenderness is very localised, and only to be elicited if the patient breathes deeply against the firm pressure of the palpating finger. A normal cholecystogram in the face of suggestive symptoms, and this sign, should not be allowed to influence the diagnosis.

The only other relatively common cause of obscure fever is *erythema nodosum*. It must be admitted that the obscurity is usually referable to the fact that the legs have not been exposed. Failure to look at a patient's legs is commoner even that failure to look for enlarged glands or disease of the breasts.

Rarer disorders.—It has been my purpose to discuss chiefly the common maladies which produce cryptic fever, so I shall not do more than mention in passing the necessity of considering phlebitis, which may be painless and thus overlooked, Hodgkin's disease (often undiagnosable for weeks), lymphatic leukæmia, malaria, dysentery and tropical abscess, syphilis, rat-bite fever, and allied diseases. Glandular fever has always the adenitis to point the way, and sinus infection, though very common, seldom, in my experience, causes persistent pyrexia.

SUMMARY

(1) Most cases of obscure pyrexia prove to be quite common diseases.

(2) History, examination, and leucocyte count will usually indicate the diagnosis.

(3) Glands, bones, muscles, pelvic organs, and legs must not be overlooked.

(4) Certain drugs such as alkalis in *B. coli* pyelitis, salicylates in rheumatic fever, quinine in malaria, emetine in amœbic abscess, and N.A.B. in protozoal infections may, if all else fails, be the determining agents in establishing the diagnosis.

Although once in several years practitioner and consultant may meet a case of fever which is complex and strange, this is rare. A frank confession of diagnostic sins must include the admission that most failures have been due to careless listening, examining, or thinking rather than to any peculiar pathological rarity.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The King George V. extension of this hospital has been opened by the Duke of York, who was accompanied by the Duchess. The Duke said that the extension of Moorfields was a wonderful tribute to the voluntary hospital system. So far £108,000 had been raised towards the required £113,000, and he hoped that before the end of the Jubilee period the total would be obtained.

EPIDEMIC PEMPHIGUS OF THE NEWLY BORN

(IMPETIGO CONTAGIOSA ET BULLOSA NEONATORUM)

BY W. H. POOLE, M.B. Camb.

AND

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PEMPHIGUS of the newly born is a highly contagious skin disease which affects infants in the first few days of life. It may occur either in endemic or epidemic form; the latter variety has been rare until comparatively recently, but is now beginning to constitute a serious hospital problem. It is in America that this problem is most acute, widespread epidemics being reported with increasing frequency since about 1917. There is, however, evidence to show that the disease is becoming more prevalent in this country also, and in 1927 the Central Midwives Board issued a pamphlet [1] on the subject, describing, with the aid of a coloured plate, the rash of the disease, and giving suggestions for its prevention and control. An epidemic outbreak occurred in Cambridge during the summer months of 1931, and though adequate details were obtainable in only 9 cases it seems worthy of record if only because of the light which it seems to throw on the ætiology. Before discussing it we propose to review briefly the accounts of pemphigus neonatorum available elsewhere.

HISTORICAL

The earliest description of pemphigus of the newly born was by Ochene [2] in 1773, but it was not until 1864 that Tilbury Fox [3] first drew attention to the contagious nature of the disease, though epidemics had been described by Rigby [4] in England in 1834, and by Leseque and Trousseau [5] in France in 1850. Moldenhauer [6] recorded an epidemic in Leipzig in 1874; in 1886 Demme [7] performed the first bacteriological research into the condition; and Zechmeister [8] in 1887 first drew attention to the part played by the midwife as a carrier. From this time onwards reports were published from various parts of the world with increasing frequency; in 1904 the condition was first reported in America by Call,[9] and in 1912 Dohi and Dohi [10] gave an account of an epidemic in Japan.

The incidence has continued to rise, and Reed [11] has observed that about 1917 a disease which had been comparatively rare and sporadic changed in character and began to appear in nurseries and institutions in an increasingly virulent and epidemic form. This increase has continued.

DEFINITION AND NOMENCLATURE

The disease may take various forms, the lesions being essentially vesicular. But sometimes they become crusted, and at other times lead to widespread exfoliation, so that there is a considerable confusion of terminology. There is no doubt that the conditions described as impetigo contagiosa neonatorum, impetigo bullosa neonatorum, pemphigus neonatorum, dermatitis exfoliativa, Ritter's disease, pemphigoid, and pyodermatitis contagiosa neonatorum are in reality only different forms of the same disease. In this paper the term pemphigus neonatorum is used to cover all the varieties.

THE CAMBRIDGE EPIDEMIC

During July and August, 1931, a total of 9 cases came under our observation. The period during which new cases appeared was four weeks, and the epidemic lasted seven weeks. No cases were reported in the district after these.

There were two deaths. The first baby was very ill, ran a high temperature, showed complete desquamation of the horny layer over the whole body, and died a few hours after admission to hospital a week after the onset. The second death occurred in a seven weeks' premature child, who in the first three weeks was hardly ill in spite of extensive lesions. This child weighed only four pounds and was weakly from the first.

The other 7 cases were mild in degree, practically afebrile, with lesions varying from a pin's-head to a florin in size. No complications ensued except that in the fourth case an onychial infection developed on one finger and the nail was shed, and in the fifth case there was a recurrence of the disease after the child had been discharged from hospital clear of infection. The fresh infection was due to renewed contact with the clothes worn before admission.

BACTERIOLOGY

The bacteriology of pemphigus neonatorum has been the subject of much controversy.

The first observation was made in 1886 by Demme,[7] who isolated and cultivated a "non-chromogenic diplococcus" from the lesions of the disease. In 1891 Almquist [13] isolated, from the fluid in the lesions, an organism which was culturally and morphologically indistinguishable from *Staphylococcus pyogenes aureus*. He inoculated this organism into himself and produced a vesicular eruption, whereas the ordinary *S. aureus* produced a lesion of follicular type. Considering this an important point of distinction, he gave to the organism which he had isolated the name of "micrococcus pemphigi neonatorum."

In 1900 confusion was caused by Sabouraud [13] who obtained from the lesions of the crusted form of the disease a mixed growth of staphylococci and streptococci, and came to the conclusion that the latter were the causative agent, the staphylococcal infection being superadded. No further evidence has been produced in favour of this view except by Whitfield [14] in 1903, who described a single case in which he considered the infection to be of streptococcal origin.

Matzenauer [15] in 1900 isolated *Staphylococcus aureus* in pure culture, and concluded that the variety in the form of lesion produced by the organism was due to variations in virulence—an opinion since supported by much important evidence. In 1900 Bloch [16] made observations on 8 fatal cases, and found that although the children had died from streptococcal septicæmia staphylococci were present in the skin lesions. In 1904 Call [9] found staphylococci in the lesions of all the cases examined in an epidemic in an institution, and other observers who have confirmed these findings are Maguire,[17] Cole and Ruh,[18] Schultheiss,[19] Belding,[20] Falls,[21] and many others. Some investigators, notably Clegg and Wherry [22] in 1906, and Falls [21] in 1917, found diplococci and short chains in the lesions with some consistency; McCandlish [23] in 1925 considered these cases, as well as some of his own where diplococci had also been found, and came to the conclusion that they were in reality staphylococci, since on subculture the typical arrangement was found.

Benians and Jones [24] in 1929 made extensive investigations into the bacteriology of the disease. The *Staphylococcus aureus* isolated from all their cases showed no recognisable biochemical or cultural differences from the common *S. aureus* which is the cause of boils and follicular pustules. They also note that a streptococcus was recovered in only one of their cases—an isolated one, not related to an epidemic and in an older infant. They studied the possibility of a filtrable virus being the cause of pemphigus neonatorum, but their results were entirely negative.

Bacteriological investigations were made in 8 out of the 9 Cambridge cases, the only exception being the first case, in which the patient died shortly after admission. An intact bulla was punctured with a fine glass pipette, and the fluid was aspirated; this fluid was then inoculated on to the culture media, which were broth and a special nutrient agar. Bullæ of various sizes were chosen, and in every case the predominating organism was *Staphylococcus aureus* in typical form. In 7 out of the 10 cultures which were made this organism was found in pure culture; in the remaining 3 it was contaminated with a small proportion of *S. albus*. In 2 cases there were a few colonies of *S. albus* amid a large and almost confluent growth of *S. aureus*, and in the other case there were 3 colonies of *S. albus* amongst 37 colonies of *S. aureus*. Particular care was taken by one of us (C. H. W.) in the making of cultures, not only in selecting the earliest and youngest blisters, but also in spacing the inoculum on the medium so that the colonies resulting were not crowded. Special media were used which were designed for cultivating pneumococci and streptococci, and it is extremely unlikely that such organisms if present would have failed to appear in the cultures. Yet in no case were streptococci grown nor were any organisms seen in film other than staphylococci.

In this epidemic therefore the causative organism appears to be the *Staphylococcus pyogenes aureus*. Hæmolytic and serological tests were not performed.

PATHOLOGY

The lesion of pemphigus of the newly born is essentially one which affects the superficial layers of the skin. McCandlish [23] divides the lesions into three types:—

(1) Vesicles which coalesce and then rupture, leaving large areas of exfoliation; this form he regards as identical with the dermatitis exfoliativa of Ritter von Rittersheim.

(2) Large discrete bullæ; he considers this form to be relatively rare.

(3) Small vesicles; these may coalesce, but do not lead to extensive exfoliation.

Most of the cases have lesions which fall into one of these classes, though sometimes two or more of the types may be in evidence, or the lesion may change from one to another. Moreover, the types merge into one another (especially 2 and 3) and such classification is purely arbitrary.

A lesion has also been described in which crusts are present. These cases are reported from Japan by Dohi and Dohi [10]; some of the bullæ became covered with thin crusts, the infection otherwise being identical with the forms usually described. A similar lesion was observed in one of the Cambridge cases, in which a bullous eruption upon the abdomen and buttocks existed simultaneously with a crusted lesion upon the neck and scalp. This variation in form made no difference to the course of the disease.

In view of the occurrence of this type of lesion, and the purely arbitrary differentiation between McCandlish's second and third types, the following classification seems preferable:—

(1) Exfoliative dermatitis.

(2) Vesicular and bullous lesions, in which extensive coalescence and exfoliation do not occur.

(3) Crusted lesions.

The first class contains the majority of severe and fatal cases. The desquamation may be so severe

as to involve almost the whole body, leaving a moist red surface beneath. The first case of the Cambridge epidemic was of this type, and it is curious that in many of the epidemics recorded the initial case presents severe exfoliation, its successors being milder. This was observed by Cole and Ruh,[18] whose first case showed severe exfoliation and proved fatal; by McCandlish,[23] with whom 3 severe and exfoliative cases, ending fatally, were followed by 221 mild cases, with no deaths; and by Swendson and Lee,[25] who reported a series of cases between March, 1929, and October, 1930, of which only the first showed generalised and severe exfoliation.

The second class contains the majority of cases. The size of the lesion, and whether a bulla or a vesicle, varies in different epidemics, and is of little significance, except that with large bullæ coalescence and exfoliation are commoner.

The third class contains the rare cases, with crusted lesions, as already described. Umbilical sepsis has been suggested as a focus of the infection in pemphigus of the newly born. This is contradicted by the fact that in many of the cases there is no evidence of such sepsis, and also by the fact that the early lesions seldom appear in the umbilical region. Cole and Ruh[18] think that umbilical sepsis is far more likely to be secondary to pemphigus, and hold that in fatal cases the commonest cause of death is bacteræmia due to such infection.

SOURCES OF INFECTION

There can be little doubt that in the Cambridge epidemic the source of infection was Nurse A., who came in contact with all the babies except one. Inquiries revealed that no other person had come in contact with all the children before the outbreak. When this probable cause of the spread of infection was discovered the nurse was suspended from duty, and only one baby born subsequently was affected. This child did not live near to any of the other children, and no person could be traced who could have conveyed the infection from them. But Nurse B., who delivered and attended the infant, came from the same nursing-home as Nurse A., and it seems reasonable to suppose that, by contact with a carrier, she herself became a temporary carrier of the disease.

Some days before the birth of the first child, Nurse A. had a small perionychial whitlow. This had almost healed when the child was born, but it cannot be overlooked as a possible source of the infection.

The avenues by which the disease may spread are numerous.

It has long been recognised that the *lying-in nurse* is often the carrier of the infection; thus in 1887 Zechmeister[8] reported 28 cases from one midwife; in 1901 Jukovsky[26] encountered 12 cases delivered by the same nurse, and in 1903 Maguire[17] reported an epidemic of 18 cases, all except one of which came from one lying-in nurse.

The *mother* also may be the source of infection. Labhardt and Wallart[27] reported 16 cases of congenital pemphigus, and Reed[11] added 11 more; in these cases the infection appears to have been intra-uterine. Freeman records a hospital epidemic which is believed to have started from a congenital case. Mellon, Caldwell, and Winans[28] ascribed four outbreaks which occurred in nurseries to the presence of staphylococci in the mothers' milk; but Benians and Jones[24] thought this conclusion unjustifiable. Infected vaginal tears were considered by Cole and Ruh[18] as another source by which the child could become infected from its mother.

Falls[21] came to the conclusion that the infection might have its origin in any of the common pyococcal *skin infections*, such as impetigo or acne, in those who have to do with children. Reed[11] states that at times the physician is a carrier, particularly the general practitioner, who has to attend patients with open sepsis as well as doing obstetric work. In addition, all who come in contact with the cases, or in contact with carriers of the disease, are themselves liable to become carriers. Benians and Jones[24] and Swendson and Lee[25] have shown that *S. aureus* may be carried on the skin of apparently healthy subjects for considerable periods. Barber[29] points out that cocci from an active boil become scattered widely over the skin of the patient, who thus becomes a "pyococcus carrier." By contact with others he conveys the cocci, directly or indirectly, from his skin to theirs.

Finally, the disease may be transmitted by the contents of *hospital and nursery*, especially clothes, which may harbour specific organisms. Thus Schultheiss[19] traced an epidemic to hospital linen handled by a sorter with a suppurating paronychia.

The Cambridge epidemic illustrates spread of the disease by three of these avenues. In 8 cases infection was almost certainly spread by Nurse A., who was a carrier; in the last case it was apparently contracted from Nurse B., who became a carrier by contact; while one child (as already mentioned) was reinfected by his own clothes after being discharged cured.

ONSET

The bullæ characteristic of the disease usually appear within the first few weeks of life, and are the first sign. Collins and Campbell[30] found that in 6 out of 50 cases the onset was in the first four days of life; in 35 it was between the fourth and the eleventh days; while in the remaining 9 it was between the eleventh and twenty-first. Labhardt and Wallart[27] have recorded 16 cases in which the lesions were present at birth, and Reed[11] 11 others. Onset after the third week is rare, and the course is usually atypical.

In the Cambridge outbreak the day of onset was ascertainable in 8 cases, as follows: third day, 1; fourth, 3; sixth, 1; eighth, 3. Hofmann[31] maintained that an early onset was an indication of greater severity, but this does not agree with our experience.

The first lesion may be in almost any part of the body, though certain sites are commoner than others. In Collins and Campbell's[30] series of 50, it was on the groin in 17 cases, the lower abdomen in 10, the legs is 10, and the face in 3; in the Cambridge outbreak it was on the face in 2 cases, and in the other 7 was on the lower abdomen, leg, groin, axilla, neck, and fingers. The sites of election for the first lesion are evidently points of trauma: the napkin area and its surroundings because they are constantly irritated, and the face because it is readily accessible to scratching.

Three of our cases showed a latent period between exposure to infection and the appearance of lesions; for Nurse A., the carrier, who delivered the children, did not attend them afterwards, yet the lesions did not appear till the third, fourth, and sixth days. The latent period presumably depends on opportunities for inoculation by trauma, and Swendson and Lee[25] suggest that much bathing, rubbing with towels, and warmth and moisture from overclothing may encourage an outbreak to develop.

COURSE AND SYMPTOMS

Most of the Cambridge cases were mild and self-limited. In the 7 which recovered the lesions lasted over periods ranging from 18 to 27 days, the average being 22. Swendson and Lee[25] record a similar observation. In these mild cases the lesions appear

in one place, and for the next fourteen days the tendency is towards spread. This is by contiguity, in the form of recurrent crops of bullæ on an increasing area around the original site, and also indirectly, as shown by the occurrence of bullæ on other parts of the body. In all but 2 cases this spread to other sites was noted. It was observed that the secondary spread was almost always to sites which the child could readily reach with the fingers, the commonest being the face and groins. Accordingly the child's arms were splinted after admission to hospital, and the result was that no lesions developed on new sites.

Twelve to twenty days after the onset the appearance of fresh crops of bullæ suddenly ceases, and rapid healing takes place. Within six or seven days of this time healing is complete.

The disease therefore may be said to have three phases: (1) a period of latency, apparently of 2–3 days; (2) a period of spread, averaging about 14 days; and (3) a period of healing, usually about a week.

A striking feature of these cases was the local character of the disease and the mildness of constitutional symptoms. The babies took their food and put on weight during the whole course of the illness; they slept normally, and appeared to be perfectly well. Pyrexia was almost absent; in only one case did the temperature rise more than 2° above the normal, and then only for a short time. A striking testimony to the mildness of the infection was furnished by the case of the premature infant already referred to. It seemed so feeble that its survival seemed impossible; yet, although it ultimately succumbed with respiratory complications, it remained alive and appeared to thrive for 24 days after the onset of the disease, abundant crops of bullæ appearing during the whole period.

In the more severe type the onset is similar, but the bullæ are larger and spread with greater rapidity. They coalesce with extensive exfoliation, and the large raw weeping areas which are left may cover the whole body. There is considerable constitutional disturbance, the child being gravely ill with high fever. Death is a common sequel, the cause being a staphylococcal septicæmia, which Cole and Ruh [18] and others attribute to the infection involving the umbilicus. The duration of this type is often short; thus, Swendson and Lee's [25] case died on the fourth day, and the reports of Cole and Ruh [18] McCandlish,[22] Bloch,[16] Almquist,[12] and others show that such cases seldom survive beyond the twelfth day.

The first case of the Cambridge epidemic was of this severe type. The child had been ill a week before admission to hospital, the temperature was 104·8°, and the desquamation involved almost the whole body, large ragged pieces of epidermis hanging on by shreds. Death occurred within an hour of admission; unfortunately, permission for a post-mortem examination was refused.

DIFFERENTIAL DIAGNOSIS

The diagnosis is not as a rule difficult, but confusion may be caused by the following conditions:—

(1) In *pemphigoid syphilide* the eruption is symmetrical, and chiefly on the buttocks, palms, and soles. Other symptoms and signs of congenital syphilis are almost always present, and the Wassermann reaction is positive.

(2) *Impetigo contagiosa* is characterised by the formation of thick crusts, especially on the face and scalp.

(3) *Pemphigoid eruptions due to drugs* are uncommon, but may be caused by bromides, bismuth, or the heavy metals. A careful history is required.

(4) In *bullous varicella of the newly born* the diagnosis is often difficult, but there may be a history of exposure to infection. The eruption is usually generalised and accompanied by considerable constitutional symptoms.

(5) *Dermatitis herpetiformis* (Duhring's disease) is rarely seen in the first weeks of life, and is characterised by severe itching. The condition is a toxic one, and the contents of the bullæ are always sterile.

(6) *Epidermolysis bullosa* is an hereditary condition in which the bullæ appear after slight trauma, chiefly on exposed extensor surfaces.

(7) *Hydroa vacciniforme* is an actinic eruption, almost confined to the male sex, and attacks only the parts of the body exposed to light. It is very rare in young infants.

In all cases of doubt the diagnosis can be confirmed by the examination of fluid from one of the bullæ or vesicles. The discovery of abundant *Staphylococcus aureus* in this fluid is pathognomonic.

PROGNOSIS

In prognosis one must distinguish between the severe exfoliative cases, which run a short course and almost always end fatally, and the mild ones in which the child is not ill, the course is longer, and recovery takes place. Most of the recorded epidemics have begun with one or more cases of the first type, after which the remaining cases have run the more usual mild course. In large epidemics, therefore, the mortality-rate is relatively low; thus Almquist [12] records 134 cases with 4 deaths; Falls [21] 2 deaths in 47 cases, and McCandlish [22] only 3 deaths in 221 cases. In the smaller outbreaks in which the severe initial cases occur in the same way but the spread of infection is rapidly controlled, the percentage mortality naturally appears much higher. Maguire [17] had 8 deaths in 18 cases, and Knowles [32] 10 in 30. Of the 2 fatal cases in our own series of 9 one was due to the initial severe exfoliative lesion, but the other was in a premature child, and the pemphigus appeared to be only a small factor in its causation.

TREATMENT

The treatment falls into three phases: (1) prevention; (2) control of epidemic; (3) treatment of cases. Prevention depends on infants not being handled by anyone who is suffering from, or in contact with, an infective condition; and on scrupulous obstetric cleanliness and a rigorous nursing technique. The prevention and control of outbreaks has been especially studied in America (Olmsted,[33] Dickey,[34] Rood Taylor,[35] and Rulison.[36])

In treatment of the actual cases the most satisfactory results are obtained by frequent cleansing with a mild antiseptic, followed by a dry dressing. Gregorson [27] claims to have obtained good results from repeated exposure to ultra-violet light, whilst Cole and Ruh [18] think that the use of an autogenous vaccine is beneficial. But it seems likely that simpler measures are equally good.

In the Cambridge epidemic the cases were all isolated in a "septic ward"; special nurses who attended no other cases were responsible for the dressings, which were renewed every four hours by day, and once during the night; if the dressings became soiled by excreta they were changed at once. Whenever the skin was dressed, all unbroken blisters were pricked with a sterile needle. In all cases the babies' arms were splinted to prevent the spread of infection by scratching. The five methods of treatment employed were as follows:—

(1) The blisters were pricked with a sterile needle; the affected area was then washed four-hourly with a 1/6000 solution of perchloride of mercury in normal saline at 100° F., and sprinkled with zinc oxide powder,

and covered with a dry dressing. This method was used only for one case.

(2) The blisters were pricked as above, washed four-hourly with warm olive oil, and dressed with calamine liniment containing ichthyol grs. 15 to the ounce. Three cases were treated by this method, and all did well.

(3) The lesions were pricked and washed with olive oil as above, and then dressed with calamine liniment containing 2 per cent. of "white precipitate." This method was used for four cases, and in all it appeared beneficial.

(4) The child was bathed six-hourly in a bath containing ¼ lb. boric acid to 10 gallons of water, and the lesions then dressed with boric acid ointment. The one case in which this treatment was used did well.

(5) A stock *Staphylococcus aureus* vaccine was used in one case, injections of 20 millions, 50 millions, and 100 millions being given at intervals of two days. Practically no reaction followed the administration of the vaccine, and the treatment did not appear to have any effect on the course of the disease.

The methods (2), (3), and (4) all gave good results and there seemed to be little to choose between them.

CONCLUSIONS

Epidemic pemphigus, or bullous impetigo of the newly born, is a highly contagious disease, increasing in incidence. It is due to infection by the *Staphylococcus aureus*, and is usually conveyed by the personnel or impedimenta of the lying-in room. The organism is carried on the skin of the carrier, and is conveyed by direct contact to the skin of the infant. Clinically there are two forms: the severe exfoliative, which is rapidly fatal, and the mild, which tends to run a self-limited course with remarkably little constitutional disturbance. At the onset of an outbreak there are usually one or more severe cases, and the subsequent cases are commonly much milder. The essentials of the treatment are mild antiseptic cleansing and dressing.

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THE EFFECT OF HIGH PROTEIN DIET ON ARTERIAL PRESSURE IN CASES OF HYPERTONY

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IN this investigation an attempt has been made to re-examine the part protein plays in cases of hypertony, as regards both ætiology and treatment. Our object has been to discover the immediate effect which a high and low protein diet may exercise on high blood pressure. It is conceivable that a high protein diet by increasing the serum protein raises the colloidal osmotic pressure and in this way sets a compensatory mechanism in action which increases the hydrostatic pressure. On the other hand, it is possible that the end-products of protein, such as urea, may be factors in causing hypertension. We did not find serum protein consistently increased, and we therefore will deal in this paper with the end-products of protein only.

The plan of investigation was as follows: The patients were confined to bed throughout, and were weighed daily, fluid intake and urinary excretion being charted as a routine. All had a preliminary period, usually a week, in bed without treatment before the investigations commenced. The following régime was then followed:—

Two weeks on low protein diet. This was a diet of 30 g. of protein daily.

Two weeks on high protein diet. (1 lb. lean beef daily, 100 g. protein.)

Two weeks of low protein diet repeated.

The patients were bled, from the veins of the ante-cubital fossa (1) on the morning on which the observations started; (2) on the 8th day of the diet; (3) on the 15th day. Serum protein was estimated as well as the albumin and globulin ratio. Refractometric readings were taken, and the non-protein nitrogen and urea of the blood were determined; also in some cases osmotic pressure and blood chlorides. A kidney efficiency test was performed in all cases.

The figures set out in the accompanying Table suggest at first sight that high blood pressure is unaffected by alteration of the protein content of the diet from high to low or vice versa. If, however, the non-protein nitrogen (N.P.N.) figures are considered in conjunction with arterial pressure readings, then a relation becomes manifest between high protein diet, high blood pressure, and N.P.N. In cases where a high protein diet does not raise the blood pressure there is an increase of N.P.N.; whereas in cases where it raises the blood pressure conspicu-

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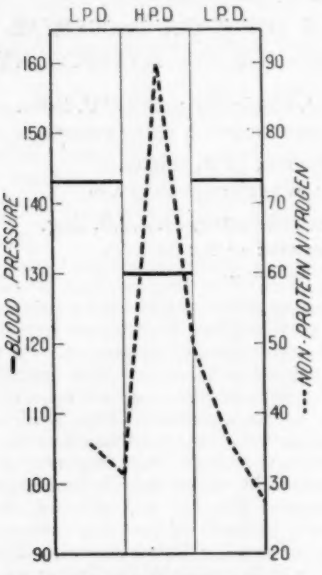

FIG. 1. (Case 4).—Average systolic blood pressure and non-protein nitrogen on low and high protein diets. On a high protein diet the N.P.N. rose while the systolic blood pressure fell.

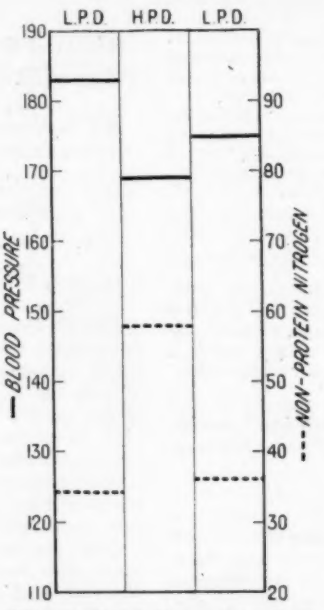

FIG. 2.—Composite curve. Cases 1, 2, and 4. Here, too, the effect of the high protein diet is to lower the systolic blood pressure and raise the N.P.N.

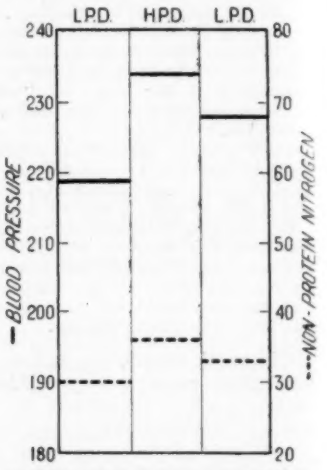

FIG. 3.—Composite curve of three cases (Nos. 3, 5, and 12) in which the effect of the high protein diet was to raise the systolic blood pressure. In these cases the N.P.N. has not markedly increased.

ously the value of N.P.N. does not increase and may even become lower. Comparison of the N.P.N. and urea figures shows clearly that where the pressure falls the N.P.N. rises (Figs. 1–3).

Obviously the rise of pressure taking place after increased protein intake is an adaptation for the purpose of assisting the kidney to remove protein end-products. In cases where the blood pressure does not rise, the end-products accumulate in the blood stream. We have reason to believe that the end-products of protein are not the only substances which raise pressure in this way. Other constituents of the blood in abnormal quantities, such as salt, bring the same adaptive mechanism into action. The cases here summarised belong to different types of hypertony, but those which are usually labelled essential hypertony react in the same way as those high blood-pressure cases which are associated with frank renal disease. We find that the administration of 30 g. of urea increases the blood pressure; on the other hand the lowering of pressure by sulphur injections results in an increase of the N.P.N.

CONCLUSION

When a high protein diet is given the arterial pressure stands in inverse ratio to the non-protein-nitrogen serum content. Where there is an adequate rise of arterial pressure, the N.P.N. content is not increased, and vice versa.

TABLE SHOWING EFFECT OF LOW AND HIGH PROTEIN DIETS ON BLOOD PRESSURE AND NON-PROTEIN NITROGEN

Case.	Low protein diet.					High protein diet.					Low protein diet.				
	B.P.			N.P.N.		B.P.			N.P.N.		B.P.			N.P.N.	
	Av.	Max.	Min.	8th day.	15th day.	Av.	Max.	Min.	8th day.	15th day.	Av.	Max.	Min.	8th day.	15th day.
1	216/110	240/120	190/100	38	31	205/83	250/100	175/75	50	42	209/98	235/110	196/90	56	33
2	190/66	205/70	180/60	..	..	172/56	190/60	150/50	50	60	173/56	190/60	162/50	32	33
3	214/115	230/130	190/110	33	33	230/117	242/120	220/110	36	47	230/120	236/120	225/120	32	..
4	143/85	148/90	138/80	36	31	130/79	145/85	105/70	90	50	143/91	145/95	138/90	36	27
5	201/108	225/120	175/100	32	36	222/110	245/120	210/100	33	32	..	..	..	..	..
7	145/82	150/90	130/75	24	25	140/84	150/90	135/75	37	31	133/77	140/75	125/80	29	32
8	232/135	255/140	205/130	33	33	220/120	260/130	190/110	33	41	215/117	220/120	190/95	39	24
9	225/122	240/130	220/120	29	32	238/125	240/130	195/110	39	28	220/120	225/120	210/120	..	36
10	145/92	180/100	140/90	34	24	172/100	180/110	120/70	39	39	160/90	170/100	120/75	..	43
11	172/95	205/115	145/80	29	26	163/94	175/100	150/80	36	33	160/92	175/105	150/80	24	28
12	242/124	260/130	200/110	26	35	251/122	270/130	240/115	39	33	254/125	270/130	230/110	31	32

B.P.= Blood pressure (average, maximum, and minimum). N.P.N.= Non-protein nitrogen mg. per 100 c.cm.

CLINICAL AND LABORATORY NOTES

GASTRIC CARCINOMA WITH NORMAL ERYTHROCYTE SEDIMENTATION REACTION

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THE sedimentation reaction depends on the observation that when a sample of citrated blood is taken from a patient with pregnancy, infection, or malignant disease, the red cells fall out of suspension more rapidly than in health, and a clear layer of plasma, whose depth varies with the intensity of the disease, appears within a short time at the top of the tube. The test is increasing in popularity in this country for the detection of obscure organic disease, but the following example shows that it may be negative with advanced malignant disease.

A man of 32 was admitted to this hospital with 2½ years' history of anorexia, nausea, and vomiting. For a year he had had pain between the shoulders and along the right costal margin. He had lost 3 st. in weight. He came to us soon after a stay of two months in another London teaching hospital, where X ray examination of the alimentary system had shown no organic disease, and a diagnosis of nervous dyspepsia had been made. The man looked ill, though physical examination was negative and he was not anæmic. A fractional test-meal showed achlorhydria of the benign type with excess of mucus but no bleeding; unfortunately he vomited when the tube was passed, and the resting contents of the stomach were not examined. A little free hydrochloric acid was secreted after the injection of histamine. The stools constantly contained occult blood.

The erythrocyte sedimentation reaction by the standard Westergren method was normal, 3 mm. in one hour. Thinking that the patient's symptoms might be due to gastritis, I asked Mr. H. W. Rodgers to examine him with the gastroscope, which revealed an ulcer with everted margin near the incisura angularis. On X ray examination there was a persistent filling defect of the pyloric antrum. The sedimentation reaction was repeated by the same technique but by another observer, and again the result was normal, 7 mm. in one hour. Sir Charles Gordon-Watson decided in favour of operation and performed a subtotal gastrectomy for a saddle-back growth of the stomach which extended from the pyloric antrum 3½ inches along the lesser curvature. There were hard enlarged glands along the greater and lesser curvatures, but no other metastases were seen. Sections showed that the growth was a spheroidal-celled carcinoma, and that the neighbouring glands contained secondary deposits.

PRIMARY STAPHYLOCOCCAL PERITONITIS IN A CHILD

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THE following case of primary staphylococcal peritonitis occurred in the practice of Dr. F. M. Davidson, of Arbroath, and the patient was admitted to the Arbroath Infirmary by Dr. J. W. Tocher, his partner, with whom I saw her in consultation.

A. B., a girl aged 6, complained of feeling unwell on the morning of Sept. 1st, 1934, and vomited in the evening. Next day she had pain and tenderness over the abdomen; diarrhœa developed and she vomited again. During the two following days she became worse. She was given Epsom salts, vomited immediately thereafter, and again had diarrhœa. She was seen by her doctor and admitted to the infirmary on the afternoon of Sept. 5th.

When seen in consultation the child looked very ill. The face was cyanosed, the eyes sunken, and she was semi-stuporose. The pulse-rate was 126; the temperature 101° F. The tongue was coated and the breath foul. Breathing was restrained, and there was limitation of abdominal movement. The whole abdomen was rigid on palpation; tenderness was generalised but greatest to the right of and below the umbilicus. Pneumococcal peritonitis was considered, but in view of the clinical findings a diagnosis of perforated appendix was made and the abdomen was opened by a gridiron incision. As it was opened a very little straw-coloured fluid escaped. The appendix was injected, but was obviously not the primary cause of the condition. Investigation revealed a generalised peritonitis, the terminal ileum being injected and covered with lymph. There was no matting of the coils, no gross distension, and very little fluid in the pelvis. A smear was taken from the pelvis and the appendix was then removed, a rubber dam drain being inserted. The child's condition after operation was precarious, and subcutaneous saline was administered continuously for the first 24 hours. After 48 hours the condition began to improve. Little had escaped by the drain, and this was removed after 48 hours. On the 15th, ten days after operation, the pulse and temperature were normal. The child was discharged well sixteen days after operation.

The smear and appendix were submitted to Prof. W. J. Tulloch, of the bacteriological department, University of St. Andrews, and he reported that the swab from the peritoneum gave a pure culture of *Staphylococcus aureus*—a finding borne out by microscopical examination. Staphylococci were also recovered from the appendix, together with *Bacillus coli*.

The staphylococcus is referred to in most surgical text-books as an uncommon cause of primary peritonitis, and few cases of this kind appear to be on record.

Fishbein [1] found in 125 cases of peritonitis, 32 primary. Among these staphylococci were found 12 times, 3 times in pure culture and 9 times mixed. Neff [2] states that "the infective organism is commonly the pneumococcus or streptococcus, occasionally a staphylococcus or colon bacillus." De Sanctus and Nichols [3] in 21 cases of primary peritonitis found in 1 *Streptococcus hæmolyticus* and *Staphylococcus aureus* together. Obadalek [4] reports 1 fatal case (staphylococcal) in 50 genuine cases of peritonitis in children. Lazarus [5] investigating 42 consecutive cases of acute peritonitis in children found pneumococci and streptococci most often. Other organisms were *B. coli* (2 cases), staphylococcus (1 case), and unidentified organisms (4 cases), either alone or with streptococci.

The probability is, however, that many cases are not reported, and that many others are ascribed to peritonitis of appendicular origin. It seems reasonable to suppose that the source of infection is the alimentary tract, and that the condition arises after a "stomach upset" in which the digestive juices no longer exercise their normal protective functions. A fatal enteritis due to staphylococcal infection can arise under such circumstances. In the case under review stomatitis and gingivitis were reported on the 15th, but in view of the patient's post-operative condition too much stress cannot be laid upon this as evidence of a definite infection from above.

I am indebted to Dr. M. Schwartz, late resident

medical officer at Arbroath Infirmary, for the notes on this case.

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A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE

By A. W. Vaisey, M.B. Camb.

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Concealed accidental hæmorrhage in its classical form is a rarity, being, like lithopædion and locked twins, very much of a text-book condition. Although the following case comes strictly into the category of a mixed hæmorrhage, the bleeding was almost entirely internal, and the case presented several interesting features.

A woman of 30, with a history of two previous confinements, both normal, was admitted to hospital complaining of slight brownish discharge from the vagina for the past fourteen days. She believed herself to be about six months' pregnant, and stated that for the past few days she had been growing rapidly paler, in spite of only a slight external staining per vaginam. There was no abdominal pain or backache, no increase in the respiratory excursions, and no thirst; in fact, there was no discomfort whatever. The pulse-rate was 76, and the temperature subnormal. The general physique was good, but great pallor of the skin and mucous membranes confirmed the patient's story. There was a complete lack of striæ gravidarum; abdominal palpation revealed a uterus that corresponded in size with a full-term pregnancy, but was everywhere unusually tense although not in the slightest tender. No fœtal parts could be made out; nor could the fœtal heart sounds be heard. Vaginal examination revealed a high cervix with an os just admitting one finger; the presenting part could not be determined, although it was certainly not head nor placenta.

Although there were no symptoms of concealed hæmorrhage apart from the obvious pallor, no other diagnosis could be entertained, and a conservative attitude was adopted. An initial dose of morphia gr. ¼ was given after the examination, the foot of the bed raised on 6 in. blocks, and thereafter pot. brom. and chloral hyd. āā grs. xx. four-hourly was given, with fluids ad lib. There was no change for three days except that the vaginal loss was slightly increased; a small daily enema sufficed for the bowels.

On the fourth day, with dramatic suddenness, a rigor appeared, with profuse sweating, pulse 120, and temperature 102° F. There was still no alteration in the respiratory excursions, and no abdominal pain or tenderness. Opoidine gr. ½ was at once administered, and the second and final vaginal examination revealed no change in the condition of the cervix. Ten hours later the rigor, pulse-rate, and temperature had subsided, when for the first time the patient complained of abdominal pain, and within five minutes she was delivered precipitately of footling, placenta, about 30 oz. of blood clot, and remainder of fœtus, in that order. The fœtus, which was slightly macerated, corresponded to about 32 weeks gestation; the placenta was heavily infarcted. For an hour the patient was considerably shocked, but an injection of 10 units of pituitrin, given immediately, gave an entirely satisfactory uterine contraction and retraction, and there was practically no post-partum oozing. Rectal salines with brandy 2 drachms four-hourly were prescribed, and in 24 hours the patient was remarkably fit.

Unfortunately convalescence was not uneventful, as 48 hours after delivery the temperature rose to 103° F. and the lochia became offensive. Intensive treatment, however, overcame the infection, and then with the aid of massive doses of iron the patient was discharged well six weeks later.

The interest of this case consists in (1) the very large internal hæmorrhage which must have occurred before admission, with practically no symptoms except pallor; (2) the occurrence of a single rigor which had completely abated before the onset of precipitate labour; and (3) a recovery which showed every sign of being complete and rapid if puerperal infection had not intervened.

MEDICAL SOCIETIES

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION

At a meeting of this society on May 28th, with Dr. E. Pickard, the president, in the chair, Dr. D. S. Russell spoke on

Some Aspects of Pituitary Function

After a few introductory remarks on the anatomy of the pituitary body and hypothalamus, she discussed the cytology of the anterior lobe and gave the reasons for the belief that the acidophil (alpha) and basophil (beta) cells were derived by transition types from the non-granular or so-called chromophobe cells. Recent work by Severinghaus on the Golgi apparatus of these cells had pointed strongly in the same direction; the form of the apparatus, as demonstrated by osmic acid methods, was different in the two types of granular cell and corresponding forms of the apparatus were to be found in the chromophobe cells. From this it was to be inferred that each chromophobe cell was predestined as a precursor of one or other of the two types of granular cell. There was no doubt that the so-called pregnancy cell was of the transitional acidophil type and not of the chromophobe series, as some writers had asserted.

Recent work on the isolation and investigation of the various anterior lobe hormones was then briefly reviewed. At the present time the existence of seven or eight different hormones had been widely accepted, and there were indications that one or two more might be added to the list in the near future. Human pathology as yet threw little light on the sites of elaboration of these hormones in the anterior lobe with the outstanding exception of the growth hormone. There was incontrovertible evidence that this is secreted by the acidophil cells. The possibility that the gonadotropic hormone is formed by the basophil cells had been entertained in many quarters but could not be regarded as an established fact. The effects upon the organism of partial and total ablation of the anterior lobe had been clearly demonstrated experimentally and were recognised in human pathology both in the pituitary cachexia of Simmonds's disease, associated with complete or almost complete destruction of the anterior lobe, and in the combined dwarfism and infantilism usually described as of the Lorain type. Dr. Russell described a case of acute pituitary cachexia following upon division of the stalk in a case of suprasellar Rathke's pouch cyst and also one of pituitary dwarfism, associated with a large suprasellar Rathke's pouch cyst.

Excessive pituitary secretion, she said, was exemplified in human pathology by gigantism and acromegaly in which the disturbance was correlated with an

adenoma of the acidophil cells. It was of interest that a transient acromegaly might appear in pregnancy, in which an excess of transitional acidophil cells was present in the anterior lobe. It might be expected, similarly, that an adenoma of the basophil cells would also be correlated with a distinctive clinical syndrome. Such a syndrome had been described by Harvey Cushing and was now well known as "pituitary basophilism." The adenoma in such cases had almost always been very small, so that no enlargement of the sella turcica could be detected radiographically. In these circumstances it had seemed remarkable and significant that so many examples of basophil adenoma could be predicted clinically and subsequently verified at necropsy. Certain difficulties, however, stood in the way of complete acceptance of this conclusion. First, it had to be remembered that an identical syndrome had been described in cases of thymic tumour and cortical tumours of the suprarenal body with no obvious change in the pituitary gland. Secondly, it was undoubtedly true that a basophil adenoma could arise in the pituitary without an accompanying syndrome. Such a case had recently been reported by H. O. Close; the association in this was with chronic Bright's disease and hypertension only. At the London Hospital A. C. Crooke had found, in a series of 300 serially sectioned unselected pituitary glands, a single example in which a relatively large adenoma of beautifully preserved and fully ripe basophil cells was unassociated with any element of Cushing's syndrome. It seemed advisable to preserve an open mind until further information was available. Insufficient emphasis had perhaps been laid upon the possible part played by the suprarenal cortex in producing the syndrome. It was noteworthy that, apart from the correlation of the syndrome with cortical tumours, there had been a conspicuous hyperplasia of the suprarenal cortex in most of the recorded examples in which the syndrome was associated with a basophil adenoma and also in the cases of thymic carcinoma. Undoubtedly there was some biological link between the suprarenal cortex and the basophil cells. Thus in Addison's disease, in which the essential lesion was a destruction of the suprarenal cortex, there was a very marked numerical reduction in the basophil cells of the anterior lobe (Crooke and Russell, 1935).

With regard to the functions of the posterior lobe the speaker pointed out that our knowledge was most fragmentary. It was not known how, or by what cells, the two hormones generally known as pitressin and pitocin were elaborated or how they acted in the normal physiology of the body. Attempts to identify them in the cerebro-spinal fluid and in the blood plasma had produced controversial results. There was no good evidence that destruction of the posterior lobe alone produced any demonstrable clinical effect. But the part played by such a lesion in the production of diabetes insipidus had for long been a subject of controversy. The general trend of recent work had indicated that the lesion responsible for the production of diabetes insipidus had to be so situated in the stalk or tuberal region that it interrupted the continuity of the nerve-fibres passing from the hypothalamus down the stalk to terminate in the posterior lobe. In this connexion it was of considerable interest that a transient diabetes insipidus might result from operative procedures on the walls of the third ventricle in cases where no gross lesion of the pituitary was demonstrable.

Recently the theory formulated by Cushing that so-called basophilic invasion of the posterior lobe was responsible for eclampsia and the hypertensive state had attracted a good deal of attention. Attempts to confirm the theory had so far failed; in particular, the work of C. Sharp on a series of 70 cases of hypertension, published last month, showed that there was no demonstrable correlation between this condition and the amount of basophilic invasion of the posterior lobe. A. C. Crooke at the London Hospital had failed to find more than a very slight invasion in a series of four eclamptic pituitaries examined by serial section (unpublished). Apparently this had also been the experience of J. H. Biggart. It should be concluded therefore that we still had no clear conception of the part played by these basophil cells in the posterior lobe if indeed they had any function.

The speaker in conclusion suggested that in face of recent tendencies to regard the pituitary as the master gland of the endocrine system we should be wise in remembering the remarkable degree of intricacy in the relationships of members of this system. It was unwise to attribute a dominant rôle to any one gland until we knew more of the workings of the system as a whole.

REVIEWS AND NOTICES OF BOOKS

Recherches anthropométriques

Sur la Croissance des Diverses Parties du Corps. Second edition. By Dr. PAUL GODIN (de la Flèche), Médecin Commandant des Hôpitaux de l'Armée. Paris: Amédée LeGrand. 1935. Pp. 268.

THE first edition of this notable book was published thirty-three years ago, and was honoured by the Parisian Anthropological Society, by the Academy of Medicine, and by the Institute of France; it has stood since then as a classic work of reference among French anthropologists and anatomists. Dr. Godin has now added the results of his researches in the intervening years on the influence of puberty on growth. The book sums up, in a sense, the painstaking work of a long lifetime—for Dr. Godin's original monograph was issued fifty-four years ago. The ever-ripening field open to his investigation in the French army schools and hospitals has been faithfully reaped by him, and he has set up a standard hard to follow. The mere physical strain of personally carrying out twice a year on each individual subject the observations necessary to fill up the 175 details required would be trying enough, and when we add to this the cross-analysis of this multitude of facts and figures we must congratulate the author on the possession of quite unusual stamina and enthusiasm.

"Fascinating" is not a term to be lightly applied to collections of anthropometric data, but it is the word which rises to the mind as one reads this really great work. The analyses bring forward new and often unexpected results, while that of puberty shows the wide association of this period with the general structure in the body, in matters both of growth and atrophy. The book deals only with puberty in the male, although occasional mention of conditions in the other sex is made for comparison. The work is a storehouse of accurate and wide-based information which does not lend itself to abstractions. There seems to be material here which might be utilised with advantage by those who have to do with young and growing lads, such, for example, as the results which appear in the analysis of the "rapport S/B"

of Manouvrier. This shows clearly that, while mesatiskelety gives an index of 90, let us say, macroskelety may give one of 100 and brachyskelety one of 81 or 82, but it also shows that, whereas the normal index remains practically constant during the years of puberty, the two subnormal states increase their differences. When this is taken into account with the marked changes in the development of the upper and lower parts of the thorax in these states, it seems likely that the facts possess some clinical interest; in any case they offer a clearer conception of the conditions than that presented by the rather indefinite "sthenic" and "asthenic" types of constitution of which one hears occasionally. A chapter on the little-known effects of puberty on the pigments of the eye brings to an end this important book, which will doubtless remain the classic work on the bodily facts of growth.

Occupation and Health

Vol. II. *Encyclopædia of Hygiene, Pathology, and Social Welfare.* International Labour Office. London: 12, Victoria-street. 1934. Pp. 1310. Both Vols.—£4 paper; £4 7*s.* 6*d.* cloth.

THE second volume of this compilation completes a comprehensive work, the first part of which was published in 1931. This volume deals with subjects in alphabetical order from I to Z. The headings relate to diseases, to groups of persons according to occupation, to particular occupations or to special substances causing risk to those brought in contact with them at work. Each subject is dealt with under subheadings, varying according to its nature, but, in most cases, including symptoms, diagnosis, pathology, prophylaxis, statistics, hygiene, legislation, and bibliography. Facts are drawn and instances given from all industrialised countries, so that a mass of information is brought together which cannot readily be found elsewhere. It would be too much to expect that a publication of this kind should distinguish the more from the less significant data it furnishes; discrimination must be left to the reader. Since the encyclopædia has taken several years to compile it is, of course, not completely up to date in its facts, so that it will be of less use to the specialist in occupational diseases than to those whose contact with such diseases is occasional and unofficial. Purchasers would be well advised to obtain the cloth-bound volumes, which are only 7*s.* 6*d.* dearer than the paper-bound. For a book of this size and weight even strong paper covers are unsatisfactory.

Text-Book of Surgery for Dental Students

Fourth edition. By G. PERCIVAL MILLS, M.B., B.S., F.R.C.S., Hon. Surgeon, General Hospital, Birmingham; and HUMPHREY HUMPHREYS, M.B., M.D.S., L.D.S., Hon. Surgeon, Birmingham Dental Hospital. London: Edward Arnold and Co. 1934. Pp. 342. 14*s.*

THIS book is designed to give dental students a general idea of surgery and its principles combined with more detailed knowledge of affections of the mouth and face. It is admittedly a very difficult task to review the whole of surgery in a small compass, and at the same time to avoid inaccuracies. On the whole the authors have been successful, but it is regrettable that more care was not taken in the revision of those parts of surgery which are of direct interest to the dental student. For example, the recommendation made on p. 203 and repeated on p. 241, to remove the premaxilla in the treatment of bad cases of cleft palate, is good neither from a surgical nor dental standpoint. Again, the suggestion made (p. 288) that large dental cysts which invade the antrum of Highmore after operation will become obliterated by new bone formation can scarcely be based upon observation. In other sections of the book there are misstatements, but these being outside the usual purview of the dentist, are perhaps of less importance. The work is excellently printed and illustrated.

Aids to Surgery

Sixth edition. By CECIL A. JOLL, M.S., F.R.C.S., B.Sc., Surgeon to the Royal Free Hospital; and REGINALD C. B. LEDLIE, M.B., B.S., F.R.C.S., Surgeon to the Miller General Hospital. Illustrated by H. H. GREENWOOD, M.B., B.S., F.R.C.S., Consulting Surgeon, G.W.R. Hospital, Swindon. London: Baillière, Tindall and Cox. 1935. Pp. 612. 7*s.* 6*d.*

IN this edition "Aids to Surgery" has been much enlarged and completely rewritten without losing its essential character of a synopsis useful to the student during the weeks immediately preceding his examination. No doubt students will continue to use it for this purpose to their profit on the appointed day. A great number of important facts have been collected in a very small compass and the illustrations are of that excellent diagrammatic nature which impresses the memory.

L'eczema du nourrisson

By Drs. M. PEHU and R. AULAGIER. Paris: Gauthier-Villars. 1934. Pp. 177. Fr.25.

THIS comprehensive review of one of the most common diseases of infancy is written on text-book lines in 14 chapters, which include a summary and a bibliography which is almost limited to French contributions to the literature. The introductory pages define the term and there follow a few brief pages on the historical aspect. Chapter 6 is particularly worthy of close study. It deals with the more serious general complications and the occasional accident of sudden death, which every dermatologist has had to record at some time or other during the treatment of infantile eczema. The authors state that in proportion to the incidence such cases are rare, but every large clinic sees them yearly, and it is strange that the mortality is actually higher in proportion among the cases admitted than in those left to take their chance in ill-equipped houses and lodging-places where the elements of sepsis and ignorance must surely be more potent than in the modern hospital ward. Some interesting experiments by Worlinger, who reproduced somewhat similar cutaneous manifestations in the course of attempts to desensitise by intradermal injections of egg albumin, are discussed, and believed to have a bearing on the incidence of the syndrome and its fatal issue. Further chapters on less immediate sequelæ, the prospect of eczema and asthma in later years, the laboratory findings, the results of food and other tests, hypotheses of the nature of the disease, differential diagnosis and the detailed treatment combine to present a rather formidable compilation. But the authors' style is pleasant and the sectional arrangement into subheaded paragraphs assists the memory and holds the attention.

The monograph omits nothing that is essential in its account of the disease, and all who read French easily will do well to read it.

THE LANCET

LONDON: SATURDAY, JUNE 8, 1935

PEMPHIGUS NEONATORUM

OVER three hundred diseases of the skin are now recognised, and this fact alone is enough to discourage the average student from acquiring more than a superficial knowledge of dermatology. Moreover, not even the specialist can hold any brief for the existing nomenclature of skin diseases. For the most part it is fanciful, redundant, and based upon superficial resemblances rather than ætiological considerations. In addition it is very confusing, since the same terms—e.g., pityriasis, lichen, erythema, dermatitis, impetigo, and pemphigus are applied indiscriminately to entirely distinct conditions. The word pemphigus (πέμφιξ, a blister) has been employed in the past to designate a number of bullous eruptions; thus:

P. acutus, a specific infective disease due, perhaps, to a diplococcus, and met with chiefly in butchers.
P. vulgaris seu *chronicus* (with the varieties *P. vegetans* and foliaceus), a disease of unknown causation, probably infective, but certainly distinct from the above.
P. neonatorum, a bullous impetigo of the newly born, caused by the staphylococcus.
P. contagiosus tropicus (Manson), a bullous form of impetigo, affecting chiefly the axillary and crural regions, very common in certain low-lying regions of the tropics, and, according to Castellani and Chalmers, also due to staphylococcal infection.
P. congenitalis = epidermolysis bullosa, a congenital and often familial disease.
P. hystericus, a bullous dermatitis artefacta.
P. syphiliticus, the only bullous syphilide, met with on the palms and soles of congenitally syphilitic infants either at birth or a few days later.

At the present time the term is practically restricted to the first three diseases, and should in our opinion be abandoned for the first and third.

In an article published on another page of this issue Dr. POOLE and Dr. WHITTLE offer the alternative title of "impetigo contagiosa et bullosa neonatorum" for what is more generally called pemphigus neonatorum. That the eruption is clinically a variety of bullous impetigo there is no doubt, but unlike the common form of impetigo it is not caused by a primary infection with a streptococcus, but with a staphylococcus. Now staphylococci tend to involve the pilosebaceous follicles; their toxins excite a diapedesis of polymorphonuclear leucocytes, and the more virulent strains are necrogenic. The common and superficial follicular pustule, due to infection around the mouth of a follicle by the *Staphylococcus albus*, is the simplest type-lesion. The so-called impetigo of Bockhardt, better termed acute porofolliculitis, is merely an eruption of numerous follicular pustules, due in mild cases to an *albus* and in the more severe to an *aureus* or *citreus* strain. The boil is caused by a deeper invasion of a follicle by *Staph. aureus*, and is characterised by the intensity of the inflammatory reaction, and by perifollicular necrosis, which results in the formation of the core. The carbuncle is merely an agglomeration of boils accompanied by massive and diffuse tissue necrosis. The follicular involvement, the polymorphonuclear exudate, and the tendency of virulent strains to produce necrosis are thus the principal characteristics of staphylococcal invasion of the skin. Streptococci, on the other hand, have no predilection for the follicles, are less pyogenic, and tend to provoke an exudation of clear serum, containing only a few leucocytes. The initial vesicle or bulla of the impetigo of Tilbury Fox illustrates these features, and its subsequent invasion by polymorphonuclear leucocytes is doubtless attributable to the superadded infection by staphylococci, which always occurs in streptococcal impetigo.

Theoretically, therefore, pemphigus neonatorum, in which the initial lesion is a vesicle or bulla, containing at first clear serum, should be streptococcal in origin, and SABOURAUD certainly held this view. But many investigators have established the staphylococcus as the causative organism, and this is upheld by Dr. WHITTLE's own researches in eight cases of the disease. Like HAXTHAUSEN [1] he employed special media favourable to streptococci and inimical to staphylococci, but in no case were streptococci cultured. Many years ago JADASSOHN [2] described a bullous impetigo, affecting particularly the extremities, and due not to a streptococcus but to a staphylococcus, and HAXTHAUSEN has confirmed this. Moreover, BENIANS and JONES [3] noted that, when an adult was infected from handling an infant with pemphigus neonatorum, the resulting lesions tended to be of the bullous type described by JADASSOHN. They suggested that the bullous reaction of the skin, which is more characteristic of streptococcal infection, might be a response to a special strain of *Staph. aureus*. This question arises again in the rare disease, acrodermatitis continua, of which the dermatitis repens of Crocker is the localised variety. From cases of this disease a strain of *Staph. aureus* has been isolated from the skin, mucous membrane of the mouth, and from the fæces, which grew readily on media that inhibit the growth of ordinary strains. In this condition, however, the primary cutaneous lesion is a non-follicular intraepidermal abscess, formed by infiltration of the rete with polymorphonuclear leucocytes, whereas the contents of the bullæ in pemphigus neonatorum are initially clear, as in streptococcal impetigo. In these two atypical forms of staphylococcal infection, therefore, it would seem that special strains may be responsible for the peculiar features of the eruptions. Dr. POOLE and Dr. WHITTLE agree with MCCANDLISH in regarding the exfoliative dermatitis of Ritter von Rittersheim ("Ritter's disease") as a severe and usually fatal form of pemphigus neonatorum. Since such fatal cases do occur, particularly at the beginning of

[1] Haxthausen, H.: Ann. de derm. et de syph., 1927, viii., 201.
[2] Jadassohn, J.: Die Pyodermien, Halle, 1912.
[3] Benians, T. H. C., and Jones, B. H.: THE LANCET, 1929, i., 174.

an epidemic, a study of the possible sources of infection is of great importance. This question is fully discussed by POOLE and WHITTLE. As a rule contact of the infant with a pyococcus carrier, whether direct or by articles of clothing, is clearly responsible. A medical man suffering from impetigo of the scalp and neck noticed that in four out of the last six confinements he had attended the babies had developed pemphigus neonatorum, of which three died.

In considering the response to treatment it must be borne in mind that in staphylococcal as in streptococcal impetigo we are dealing with an acute infective disease. Although in both conditions suitable local treatment may, perhaps, limit the spread of infection and hasten the healing of existing lesions, it is very doubtful whether it actually shortens the duration of the attack; for recovery appears to depend on the spontaneous development of immunity to the infecting organisms. In pemphigus neonatorum it is probable that the fatal cases are doomed from the onset, and that the others recover no matter what line of treatment is adopted. This view is supported by the observations of POOLE and WHITTLE, for they state that in the benign cases the appearance of fresh crops of bullæ suddenly ceases from 12 to 20 days after the onset, and that then rapid healing takes place. The same is true in the majority of acute outbreaks of streptococcal impetigo, and it is obviously the development of sufficient immunity to the infecting organisms that accounts for the subsidence of the attack. Moreover the authors employed five different methods of treatment and the results were much the same in each. They are to be congratulated upon their clear and convincing discussion of a potentially fatal infection. In the present state of our knowledge preventive measures are clearly of greater importance than is the treatment of the disease itself.

THE ABATEMENT OF NOISE

THE annual general meeting of the Anti-Noise League was held last week in the Science Museum, South Kensington, when Lord HORDER, the chairman of the League, presided over a large gathering which was addressed by the PRIME MINISTER. An accompanying exhibition in illustration of the production of noise and its possible remedies was opened by the PRIME MINISTER and must bring before the public and the medical profession both the serious nuisance with which the public puts up through the prevalence of noise, and the many practical steps which can be taken to abate that nuisance. The League has published an official handbook surveying many aspects of the problem, and to this the chairman of the League supplies a brief preface in which he assumes that the nuisance of noise as a disturber of human happiness has been generally accepted—a point which is shown by the fact that needless noise is already being suppressed wherever possible. But the range of possibility must be extended, for the amount of noise which remains to be got rid of is very great. The directions in which further measures can be taken are indicated in the handbook, whose contents call for earnest attention. Grumbling at the additional burden to life inflicted by noise is widespread; the League exists to give practical effect to that grumbling by securing effective remedies.

What amount or character of noise can be made without an offended public or individual having the right of redress against those responsible for its origin is rendered hard to determine through the fact that there is no legal definition of nuisance; but Mr. H. G. STRAUSS, K.C., by setting out cases where injunctions have successfully been obtained, helps us to appreciate what very considerable relief may exist if the public realised its powers, and also the very real menace to health brought about by needless din. Air Vice-Marshal Sir DAVID MUNRO, secretary of the Industrial Health Research Board, describes in the handbook two experiments carried out by the Board which went to show that the reduction of noise intensity effected by using ear defenders was accompanied by an increase in the efficiency of the workers of about 8 per cent. As in these experiments the good effect was found to be neither temporary nor to occur only in individuals when first exposed to a noisy environment, but was shown to exist among those who had for years been accustomed to excessive noise as a normal accompaniment of their work, it follows that the tolerance of excessive noise may never be completely acquired, and that those who dismiss the possible damage to workers and work in factories with the facile consideration that "the men are used to it," will have to revise their opinion. These experiments were dealing only with an excessive noise of a sort to which the public is not exposed, but Wing-Commander T. R. CAVE-BROWNE-CAVE, professor of engineering, University College, Southampton, writing on noises caused by motor transport, approached the subject at a point which concerns us all. We learn, as the result of an inquiry initiated in the *Times* by Sir HENRY FOWLER, chairman of a special committee of the British Association appointed to consider the question, that the noises which try the public most are those caused by motor bicycles and inadequately silenced cars, the humming of aircraft being also frequently complained of. The subject of mechanical silencing is discussed in considerable detail by Prof. CAVE-BROWNE-CAVE, who shows two very satisfactory things, that effective silencing is more easily obtained than the noise in our streets would have led one to suppose, and that manufacturers are on the alert, and are ingenious and anxious to put down noise. The last is amply proved by the display in the exhibition of numerous effective appliances for bringing about the quiet running of machinery, subduing the reports of exhaust and other noises associated with motor traffic, and mitigating noise within buildings.

The PRIME MINISTER, in addressing the meeting, was eloquent in a diatribe against the callousness and vulgarity which sanctioned the production of much of the noise amidst which we live, while Sir HENRY RICHARDS, chairman of the executive committee of the League, brought the question more closely within medical range by stressing the

pain and evil influences which invalids and children incur through being subjected to perpetual noise. And if noise exercises deleterious influences upon adult and industrial workers, how much more must it have evil repercussions upon the sickly, the delicate, and the young? It is right to remember that the young love making a noise, and Lord HORDER has pointed out that it is unkind to suppress this natural instinct; he would allow the fullest use of the lungs and the loudest and shrillest toys in the nursery or in the playing field. But these are not the places where the invalid tries to rest or the child to sleep. The arguments in the handbook published by the Anti-Noise League, and the devices brought together for consideration in the exhibition on view for the next month at the Science Museum, should secure for the League wide support in its attempts to stamp out needless noise. The law has shown itself sympathetic, and legislation will surely follow upon public demand such as the League will organise.

THE PHYSIOLOGY OF THE FŒTUS

IT is usually taken for granted that the specific functions of cells are in abeyance when they are undergoing growth or proliferation. It is not surprising, therefore, that our knowledge of fœtal physiology is that of the development of the various organs rather than that of the work which they actually perform. Prof. J. BARCROFT and his colleagues during the last few years have shown that the reverse side of the picture is by no means a blank. They are beginning really to understand the respiration and circulation of the fœtus. Their earlier observations were reviewed by Prof. BARCROFT in our columns two years ago[1] and in the Croonian Lecture which he gave before the Royal Society last month he was able to add the considerable results since obtained.

The elaborate technique of experimental physiology has here amply justified itself by revealing the apparent anomalies which gave rise to these investigations. Measurement of fœtal blood flow and oxygen usage had been attempted by previous workers without much success, but of recent years more consistent measurements have been obtained, notably by the Cambridge school. They have been able to show conclusively, in the goat, that if the hæmoglobin of the fœtus and the hæmoglobin of the mother had the same properties, and if oxygen could only pass from one to the other across the placental membrane by diffusion, the fœtus could not possibly obtain sufficient oxygen to maintain life during the latter part of pregnancy. The only way in which the mother can ensure an increasing oxygen-supply to the fœtus is by increasing the volume of the blood passed through the placenta in unit time and keeping this blood as fully oxygenated as possible. Owing to the fact that the fœtus grows in size at a much greater rate than does the placenta, and by its increased blood flow abstracts the maximum amount of oxygen from the maternal blood, these maternal mechanisms must inevitably break down. How then is the life of the fœtus preserved? A study of the oxygen dissociation curves of fœtal and maternal hæmoglobin shows that in most animals the maternal curve is depressed and moved to the right, while the fœtal curve is moved to the left. This means that at a given pressure the available oxygen will distribute itself in unequal volumes between the two hæmoglobins, the fœtal taking the greater share. The less the actual tension of oxygen the more marked is this disparity in distribution. There is yet much work to be done concerning the nature of this difference between fœtal and maternal blood. The maternal hæmoglobin does not actually change, but its properties are modified by the diminution in alkali reserve which takes place during pregnancy. Fœtal hæmoglobin, on the other hand, shows definite but perhaps chemically slight differences from that of the adult, and these differences are of very great physiological importance. The nature of the conversion after birth of the fœtal type of hæmoglobin to the adult type remains undetermined, but raises interesting questions with regard to the storage of iron during this stage, and the occasional occurrence of icterus neonatorum. We must be cautious, however, in transferring these results uncritically from animals to man, for in his Croonian Lecture Prof. BARCROFT states that the affinities of the human hæmoglobins are themselves reversed, although the properties of the bloods assume the same relationship as in other animals when the hæmoglobin is in its normal form enclosed in corpuscles.

Another noteworthy contribution to the physiology of the fœtus, very much bound up with the foregoing, is the confirmation by physiological methods of the crossing of the blood streams in the right auricle, the arterial blood from the placenta being diverted to the head region, and the venous blood returning from the head being directed back to the placenta and the lower part of the body. It is significant that the liver receives the fully arterialised blood first, even before it gets to the heart, and that the "head" is much more extensive than was at one time believed. The arterialised blood from the aortic arch actually finds its way to all the thoracic part of the body, and to nearly the whole of the spinal cord. Most of the important parts of the body, therefore, receive truly arterial blood, although their requirements of oxygen are modest. This is largely explained by the lack of any necessity for heat production in the fœtus, and the absolute flaccidity of the muscles. So long as the experimental fœtus is kept in a warm bath, electrical records show no action currents revealing "tone" in the muscles, but such currents begin directly cold air gains access to the skin. There is, of course, a certain amount of "spontaneous" muscular movement which is probably reflex in nature, reflexes originating in cutaneous stimuli having been shown to be well established half-way through pregnancy; but the oxygen usage just before birth is only about one-fifth of that immediately afterwards. We look forward with confidence and interest to the extension of this work, already assuming concrete form in many directions. It has opened up a practically virgin soil, which has been cultivated with much ingenuity.

[1] THE LANCET, 1933, ii., 1021.

ANNOTATIONS

THE BIRTHDAY HONOURS

As is appropriate for a year of jubilee, the list of honours conferred by the King on his birthday last Monday is an unusually long one. The names set out on p. 1358 represent many kinds of work in many kinds of place, and there is unbounded effort and service behind them. The list as a whole reflects the very proper tendency towards wider recognition of work done in official positions—work which is otherwise too often taken for granted. There are some names, however, which represent achievement mainly or altogether outside public office, and first among these stands that of Sir Gowland Hopkins, president of the Royal Society, who is granted the highest possible distinction in membership of the Order of Merit. On retirement from his many years at the Board of Education and the Ministry of Health, Sir George Newman is made a knight grand cross of the Order of the British Empire; while in the Royal Victorian Order, associated with personal service to the Royal Family, Sir Cooper Perry becomes a knight grand cross, and Mr. Walton and Mr. Barrington-Ward knight commanders. Among other new knighthoods two in particular are for "freelance" service—those of Prof. Arthur Hall and Dr. P. P. Laidlaw, F.R.S. Dr. Hall's honour is granted for fine contributions to medicine with special reference to the health of industrial workers, while Dr. Laidlaw, after years of fruitful investigation both in physiology and pathology, has, with his collaborators at the National Institute of Medical Research, achieved the prophylaxis of distemper in dogs and has recently had striking success in the study of influenza. Outside the stricter confines of medicine there are several other new knights whom we may gladly mistake for members of the medical profession. Prof. Joseph Barcroft (who holds, indeed, an honorary medical degree from Louvain) has done much to increase the fame and usefulness of the Cambridge physiology school, and the medical implications of his work are brought out on the preceding page; Mr. L. J. Brock has won a high reputation by his work as chairman of the Board of Control; and Prof. J. C. M'Lennan, the Toronto physicist, has given valuable assistance in this country to those responsible for the allocation and use of radium.

THE VOLUNTARY HOSPITAL PRINCIPLE

AT the annual conference of the British Hospitals Association held at Leamington last week, the possibility of maintaining the voluntary hospital system was discussed in a paper presented by Lord Cozens-Hardy and Mr. C. A. Wells, respectively chairman of the Liverpool Hospitals Commission and assistant surgeon to the Royal Southern Hospital, Liverpool. Public support for voluntary hospitals, said Lord Cozens-Hardy, had never been more generous than to-day, but the Local Government Act of 1929 had plainly threatened the very existence of the voluntary hospital system. The proper and indeed the only possible answer in his opinion was to make the system so strong, efficient, and attractive that its essential characteristics would be left unchanged; to ensure this some machinery must be provided through which voluntary hospitals could speak with one voice and coöperate with public authorities, and this implied a speedy amalgamation of too numerous units and the preparation of a considered programme. It was pointed out in discussion that the London County Council had set an example of efficiency in standardisation and group-buying for hospitals which the voluntary hospitals could not pretend to equal, and this example must be followed without delay. The house governor of one of the principal Birmingham hospitals said that the position in Birmingham was as complicated and difficult as in Liverpool, and he urged the conference to concentrate on the larger centres. The single hospital area at the moment was made relatively safe by a local patriotism unknown among the larger groups. A representative of the Ministry of Health assured the conference of the benevolent interest of the Ministry in the voluntary hospitals and agreed that Lord Cozens-Hardy's proposals if carried out would greatly lighten the task of the Ministry. At the conclusion of the conference a statement was issued announcing the setting up of a commission of inquiry to investigate the position of the voluntary hospitals of this country. The reference of this commission is "to take into consideration the present position of the voluntary hospitals of the country; to inquire whether, in view of recent legislative and social developments, it is desirable that any step should be taken to promote their interests, develop their policy, and safeguard their future; and to frame such recommendations as may be thought expedient and acceptable."

RESEARCH IN RADIOLOGY

THE report of the National Physical Laboratory is a record of routine testing and of research carried out at Teddington during the past year. On the radiological side there has been remarkable expansion and the section of the report written by Mr. G. W. C. Kaye, D.Sc., superintendent of the physics department, contains much of interest to the medical radiologist. During the year the Teddington laboratory, in association with similar institutions on the Continent and in America, prepared a memorandum on X ray units and standardising procedure, which was adopted by the International Committee for Radiological Units at Zurich. The measurement of X rays in international r units has been facilitated by the development at the laboratory of a direct reading instrument for this purpose. Further investigations have been carried out on X ray protection as a result of which data are now available from which the degree of protection from X rays required in various circumstances may be readily computed. This department has tested protective materials and inspected the X ray equipment in use in a large number of hospitals in London and elsewhere. The national radium standard has been exchanged for a new one of exceptionally pure anhydrous radium chloride. A comparison of the old and the new standards by a gamma-ray method carried out at the laboratory showed that the radium content of the old standard agreed to within 3 parts in a thousand with the original certified value, after allowing for radio-active decay during the period 1912–1934. Nearly 12 grammes of radium in some 1700 containers have been submitted to the laboratory for measurement during the year. Periodic leakage tests of containers which are in regular use and minor repairs have been carried out on behalf of various hospitals. The measurement of the content of radium needles by the gamma-ray method necessitates the use of a correction for the absorption of gamma rays in the walls of the needles. As a result of further research, more accurate absorp-

[1] H.M. Stationery Office. Pp. 260. 13s.

tion corrections have been obtained for tubes of platinum and monel metal. The protection of those engaged in radium therapy has been the subject of further study and experiment. Two factors of gamma-ray protection have been studied—viz., remoteness and lead-shielding in a variety of routine circumstances. As a result the minimum shielding and the tolerance working distance have been determined under the various conditions commonly met with in radium therapy. A development which will be watched with interest is the application of X ray crystallographic methods to the study of tooth structures. A technique has been developed for obtaining X ray diffraction patterns directly from the surfaces of teeth. This study, the report states, is still in the preliminary stage, but the results already obtained are encouraging.

TROPICAL MEDICINE IN CHINA

THE first volume of the Transactions of the Far Eastern Association of Tropical Medicine held in Nanking, China, in October, 1934, has already been reviewed in these columns, and now a second equally stout and well-documented volume has followed hard on its heels. This volume, edited with no less assiduity, consists of some 100 papers on such diverse subjects as malaria, medicine, ophthalmology, parasitology, pathology, pharmacology, physiology, plague, public health, quarantine, radiology, and surgery. Under the heading of malaria extensive researches upon treatment (notably with atebrin) and on the prevention of the disease are published. C. D. de Langen and C. J. Storm have written on the modern medical treatment of malaria, from the department of internal medicine of the Medical School of Batavia, Java, where they have enjoyed the collaboration of a physiologist who has recorded the ventricular tracings of the heart and cardiographic curves in monkeys treated with quinine, plasmoquine, and other antimalarial drugs. A. L. Hoops has made a series of observations on the prophylaxis and cure of malaria with atebrin on Malacca Rubber Estates; his experiences have been extremely favourable to the drug.

In the medical section H. S. Gear and H. Pedersen contribute an informative study on diseases common to man and animals in China, which appears to swarm with parasites of all kinds. T. Y. Li and H. Gordon Thompson write on the treatment of *Schistosomiasis japonica* with antimony compounds; they see no reason to doubt the generally accepted view that potassium antimony tartrate is the best method of getting rid of this parasite. Dr. T. S. Kwa has made a study, illustrated by radiograms, of lead encephalopathy in Chinese children, in which the children have been poisoned by their mother's milk; the onset is apparently encouraged by a state of avitaminosis. There are three papers on beri-beri as it occurs at present in China, and it is evident from the work of Y. Y. Ying that this disease is apt to supervene as an important complication in typhoid fever. Teodulo Topacio, of the Bureau of Animal Industry, Manila, has devised a method of transmission by a single trypanosome.

In the section of pharmacology B. E. Read has made a historical investigation of the newer pharmacology and its relation to ancient medicine. Dr. H. A. Bor and Dr. C. J. Storm write of a clinical and experimental investigation of evipan-sodium anæsthesia. Lt.-Col. A. J. H. Russell contributes a paper on plague in India, in which he shows that the plague mortality in that country during the five-year period from 1898–1933 totals over twelve million deaths. To the section of surgery J. Gray and H. Gordon Thompson have contributed a readable paper on surgical complications of parasitic diseases, and the volume ends with a series of papers upon vesical calculus amongst the Chinese. The fact that these transactions have appeared within a few months of the congress adds to their interest.

DIAPHRAGMATIC HERNIA

WE have already drawn attention[1] to the symptoms which, when confirmed by radiological evidence, often enable a diagnosis of diaphragmatic hernia to be made with some confidence before operation. Sir Thomas Dunhill, in an Arris and Gale Lecture delivered before the Royal College of Surgeons,[2] has given an account of 25 patients suffering from various types of this condition, on 6 of whom he has successfully operated. He draws the conclusion from his records that the symptoms in a case of diaphragmatic hernia strongly suggest their origin; and that, when the patient has an œsophagus of normal length, operation is able to cure the distressing symptoms, and usually carries with it a risk less than that inherent in the disease. Unfortunately the commonest type is that associated with a short œsophagus, the cardia being situated some distance above the œsophageal orifice in the diaphragm; 14 of Dunhill's cases were of this nature, and for such cases no radical cure has as yet been planned. The proportion of "diaphragmatic herniæ" which are really attributable to a short œsophagus is so high that it may constitute a pitfall for the radiologist. In one of Dunhill's cases the original diagnosis was "short œsophagus." A lateral X ray picture, however, showed an œsophagus of normal length lying behind the stomach, a large part of which was situated in the posterior mediastinum. Complete relief of the very pronounced symptoms followed withdrawal of the stomach from the thorax and closure of the gap. Had the original X ray diagnosis been accepted, the patient would never have been given the chance of operation. The short œsophagus is, in Dunhill's opinion, a definite failure in development, and a cause of symptoms which tend, once they have appeared, to be progressive. It is not to be dismissed as a mere extension upwards of the gastric type of mucosa. Hydrostatic pressure from below, and the suction effects of inspiration, tend to increase the herniation of the stomach, while distension of the thoracic loculus and rotation of the stomach on its long axis may easily kink the œsophagus and may cause pressure effects on the pericardium. Cardiospasm also tends to occur, and in some cases there is an organic stricture of the œsophagus; gastric ulceration has also been reported. The causes of dysphagia and of thoracic pain and oppression are thus numerous, and the reasons for the progression and inconstancy of the symptoms explained.

In the short œsophagus type of hernia, and in para-œsophageal hernia, as described by Prof. von Bergmann, Dr. A. F. Hurst,[3] and others, there is no developmental defect in the diaphragm. In the other types of diaphragmatic hernia, failure either of the normal process of closure of the pleuroperitoneal canal, or of muscular transformation of the membranous diaphragm can be recognised. In the process of muscularisation, Dunhill points out, the crura are last to develop, and he believes that non-development of one or of both crura is an important cause of hernia. Thus, although he allows that hernia at the costo-vertebral angle in infants is probably due to a persistence of the pleuroperitoneal canal, in adults a definite

[1] THE LANCET, 1934, i., 638.
[2] Brit. Jour. Surg., 1935, xxii., 475.
[3] Guy's Hosp. Rep., 1934, lxxxiv., 43.

sac is present, illustrated in each of the three cases which he himself describes, and his impression is that congenital absence of the left crus of the diaphragm is the underlying cause. Congenital non-development of both crura accounts for the type of hernia which, as mentioned above, may be mistaken for a short œsophagus. There is no attachment of the diaphragm posteriorly in the region of the aorta and œsophagus. As might be supposed, a satisfactory operative closure of the defect is not easy; but, nevertheless, this operation has had much clinical success. Herniæ through the retrosternal attachment of the diaphragm and through a defect in the left dome of the diaphragm were found in three other cases, in two of which operation was successfully performed.

The symptoms in these cases are related either to the obstructive effects on the gastro-intestinal tract, or to pressure on the thoracic contents. Thus, in some cases the main complaint is of a sensation of bursting and of tightness and pain across the chest; in other cases, indigestion, vomiting, or hæmatemesis predominates. It is not unusual for both types of symptoms to be associated, and the patient may be actually afraid to eat, though badly wanting food, or be unable to turn over comfortably in bed. It is important to recognise that in herniæ through a large diaphragmatic defect, in which there are no adhesions, the abdominal contents enter the sac only at intervals and may be completely absent from the thorax at the time of radiological examination, or at operation; where the abdominal return of the organs is obstructed, the condition of thoracic herniation, once it appears, must be progressive. In cases which are inoperable a certain amount of relief may follow the use of a stomach pump or the passage of a bougie.

THE DENTAL SIGN

OPENING the twenty-eighth session of the Dental Board of the United Kingdom Sir Francis Dyke Acland spoke of the exhibition of signs as a means of notification of dental practice. The Dental Board, he said, had been in touch with the British Dental Association, the Incorporated Dental Society, and the Dental Public Service Association in the matter; representatives of all these organisations had expressed agreement with what he believed to be the policy of the Board. Sir Francis then restated in a few words the principles of this policy. "We try," he said, "to pursue not a static but a progressive policy; one cannot bring everyone in every place up to exactly the same standard at any given time. But a great many signs have in some places (particularly seaports or commercial centres like Hull, Newcastle-on-Tyne, and Dundee) habitually, and in other places sporadically, been beyond what is necessary for reasonable notification of the place of practice; and the Board are bound to pursue progressively attempts to secure improvement. New entrants to the profession, therefore, will be well advised to realise that it is unwise to assume that the most conspicuous signs which they can find already being exhibited by any of their fellow-practitioners in their district at the moment can safely or properly be accepted as setting the standard of what they should themselves exhibit." Sir Francis went on to express a hope that friendly agreement would be reached between the Board and the dental organisations about the means to be adopted for effecting improvement. The British Dental Association had, he said, conducted a survey recently in which definitely undesirable matters were reported, e.g., a dentist in Dundee with five large plates, a lettered lamp, a V-shaped sign with 4-foot sides, and four window signs; in Newcastle-on-Tyne a dentist with a plate, a door sign, a fanlight sign, and three window signs. It is likely that a joint advisory committee will be formed so that agreement may be reached on the action which ought to be taken—in the first instance in certain specific districts. It is essential, Sir Francis added, that exactly the same standard be observed with members of dental organisations as with non-members and that the action taken in any place should be simultaneous.

THE NATURE OF TUBERCULIN

LAST year S. R. Douglas and P. Hartley found[1] that even after autoclaving and prolonged heating at high temperatures solutions of old tuberculin retain not less than half of their original activity. The practical importance of the physical properties of tuberculin are brought out in a recent note[2] by H. J. Parish and R. A. O'Brien. Not only does tuberculin survive autoclaving, but it clings to glass and is not removed by ordinary washing. There is therefore considerable danger of misleading reactions if syringes which have been used for the injection of tuberculin are later used for other purposes. This stability to heat of tuberculin raises the question of its chemical nature. It has generally been considered to be a protein, and F. B. Seibert in 1928 described[3] its preparation as a heat-coagulable protein free from all except traces of carbohydrate. However when such preparations were coagulated by heat a certain amount of activity remained in the uncoagulated portion. A more recent paper[4] by the same author gives an explanation. The molecular weight of active protein prepared from unheated tuberculin is about 24,000, or rather less than that of egg albumin, while that of the preparation from heated tuberculin is from 2000 to 4000. The smaller molecules still give the specific tuberculin reaction, although they are no longer antigenic in the sense of producing antisera on injection. It appears that when tuberculin protein is heated it not only undergoes an internal rearrangement resulting in insolubility, as do proteins such as egg albumin, but also breaks up into smaller molecules. The specific activity resides in relatively small groups of amino-acids which resist disruption.

PNEUMONIA AND DIGITALIS

SOME years ago the statement was made that "the routine giving of digitalis to patients with lobar pneumonia is dangerous."[5] Cohn and Lewis[6] preface their inquiry into this controversial subject by reviewing the statistical method by which this conclusion was reached, namely, the "alternate control system." This system, they agree, is valid so long as the number of cases is sufficiently large, but they reject it as unsuitable for the present purpose in view of the variations in pneumococcal virulence over a period of years and in human susceptibility. Failing a sufficiency of material they prefer an analysis and comparison based on "severity of the disease," and this has involved a preliminary decision as to what should be regarded as unfavourable factors in the course of the disease. The following eight factors have been selected as having an influence on the outcome of pneumonia: type of work (light or heavy); type of pneumococcus; age (above or below 40); alcoholism;

[1] Tubercle, 1934, xvi., 105.
[2] Brit. Med. Jour., May 18th, 1935, p. 1018.
[3] Amer. Rev. Tuberc., 1928, xvii., 394.
[4] Ibid., xxv., 724.
[5] Wyckoff, J., Du Bois, E. F., and Woodruff, I. O.: Jour. Amer. Med. Assoc., 1930, xcv., 1243.
[6] Cohn, A. E., and Lewis, W. H.: Amer. Jour. Med. Sci., April, 1935, p. 457.

bacteræmia; number of lobes involved; cardiovascular affections; and complications. The graphs illustrating the effects of each of these upon mortality are interesting, but, as Cohn and Lewis emphasise, it is usually necessary in practice to consider the effect of several factors at once, and it is doubtful how far their representation conveys a fair impression when the same importance (i.e., unity) is attributed to each. Nevertheless the graphic method does bring out the fact (scarcely unexpected) that mortality increases with the number of unfavourable factors, and it shows a sharp rise in the death-rate when three or more of those enumerated are in operation. That these eight conditions are the ones that really matter in determining prognosis is further indicated by the statement that "when none of the untoward factors was present death was rare, there being only two deaths among 288." A laborious investigation to find whether any particular combination of the eight was particularly harmful yielded no significant results.

Having thus cleared their ground, Cohn and Lewis come to digitalis in pneumonia and begin by stating the known facts—that digitalis acts upon the heart, that its therapeutic value is most evident in auricular fibrillation, that it acts upon the febrile heart, and that it depresses conduction of the cardiac impulse in pneumonia. It is rare to find auricular fibrillation as the *only* untoward factor in the illness, but the investigators feel justified in saying, first, that the chances of those who have it are not worse than those of other patients, and secondly, that digitalis has proved useful when not more than two untoward elements (other than fibrillation) have been present. "When there were more untoward elements, the chances were not worse than they would otherwise have been." Admittedly cautious, these conclusions, based on careful analysis, deserve consideration alongside the statement with which this annotation began—though, as Cohn and Lewis point out, the discrepancy may be due to differences in the methods of investigation. So far as they go, the results of the inquiry suggest that in practice digitalis does not influence the course of lobar pneumonia, except in otherwise favourable cases showing fibrillation or flutter.

ARTIFICIAL SEX HORMONES

THE chemistry and artificial preparation of the gonadal hormones has lately been reviewed by Prof. Butenandt in a lecture given in Berlin,[1] which, especially when it is compared with one he delivered last summer,[2] gives a striking impression of the speed of advance in this field. Gonadal activity can now be accounted for in both sexes by chemically pure, crystalline substances of settled constitution which have been isolated from urine or from the organs themselves. The male hormone is represented by androsterone—isolated first from urine by Butenandt, and recently prepared artificially from cholesterol by the method of Ruzicka—and by "dehydroandrosterone" and "dihydroandrosterone." The œstrogenic hormone is represented by œstrone, œstriol, and œstradiol; the last compound, first prepared by reduction of œstrone, has now been isolated from ovaries by Doisy and his collaborators,[3] and is the most active of the three. The isolation of the corpus luteum hormone from sows' ovaries was announced by four groups of workers last year, and now two methods of artificial preparation from other, more readily available, natural products are known. All these compounds are derivatives of what may be called the steroid nucleus—i.e., they contain the carbon skeleton of *cyclo*pentenophenanthrene common to the sterols and bile acids.

Two tasks remain to complete this scheme of isolation and synthesis. First, there is reason to doubt whether the urinary product androsterone accounts for the whole activity of the testis,[4] or even of crude urine extracts,[5] and laborious efforts to isolate a simple product from testes have so far failed. Secondly, an artificial preparation of œstrone has not yet been achieved, although Honigmann [6] has obtained from ergosterol an active product which resembles equilenin, one of the œstrogenic compounds in mare's urine, but which still has the sterol side-chain attached. It is not likely to be long before the chemistry of the gonadal hormones is completed in these particulars.

IODINE AS A PREVENTIVE OF GOITRE IN MAN AND ANIMALS

FROM time immemorial goitre has been treated by the administration of burnt sponge, but it was not until 1812 that a saltpetre manufacturer discovered iodine in the ash. A few years later Coindet made what Prof. Harington in his Oliver-Sharpey lecture (THE LANCET, May 25th, p. 1200) called his "inspired guess" that the newly discovered element was the active principle of the traditional remedy. This was followed by Chatin's demonstration, which failed to convince the Paris Academy, of a relationship between endemic goitre and environmental deficiency of iodine. The connexion has now been so widely substantiated that, in Prof. Harington's words, "with the possible exception of certain cases in New Zealand, there is no region where goitre is severely endemic in which it has not been possible to demonstrate an environmental deficiency of iodine." Coindet and his immediate followers employed iodine therapy as a curative measure only, but it is now being widely used as a prophylactic, and the International Office of Hygiene published in its monthly bulletin for April the answers to a questionnaire addressed to countries which are in the habit of distributing iodised salt or iodised sweets as a preventive of goitre. The questions were designed to elicit information on the composition, preparation, and presentation to the public of iodised salt or sweets. Replies were received from Germany, Italy, the Netherlands, Sweden, Switzerland, the United States of America, and Yugoslavia, and they are characterised by a considerable measure of agreement.

Practically all the countries adopt the proportion of 10 milligrammes (mg.) of iodide of potassium to one kilo of salt in their preparations, but in Switzerland the dosage is only 5 mg. All the authorities recommend that iodisation should be carried out after the salt has been crystallised and dried. Where it should be done depends somewhat on the source of supply, but, generally speaking, it is considered advisable to add iodide of potassium to ordinary household salt at the factory or warehouse, and to pack it as quickly as possible. America and Switzerland both give a warning against using unduly large containers. In America it has been found that it is possible for the iodine to become separated, and the Swiss report states that the iodine is apt to sink, so that after some lapse of time the top layer may contain only 3·5 mg. and the lowest as much as 6 or 7 mg. per kilo, the middle layer retaining its original strength. This is an indication that

[1] Butenandt, A.: Deut. med. Woch., May 17th and 24th, 1935, pp. 781 and 823.
[2] Butenandt: Wien. klin. Woch., 1934, xlvii., 897, 934; see THE LANCET, 1934, ii., 312.
[3] MacCorquodale, Thayer, and Doisy: Proc. Soc. Exp. Biol., 1935, xxxii., 1182.
[4] David, K., and Freud, J.: Acta brev. neerl. Physiol., 1935, v., 31.
[5] Callow, R. K., and Deanesly, R.: Jour. Soc. Chem. Ind., 1935, liv., 508.
[6] Honigmann, H.: Liebigs Ann., 1934, dxi., 292.

iodised salt should not be left long in bulk before being packed.

The method of packing and distribution is important. All the references to this matter agree in rejecting glass bottles, chiefly on the score of expense. In the Netherlands the iodised salt is packed in parchment bags enclosed in cardboard; in Yugoslavia it is distributed in the same way as ordinary salt, in bags of jute or canvas; Germany finds paper bags enclosed in boxes with compartments preferable to cloth or canvas; America and Switzerland consider cardboard boxes the most suitable, as being practically impermeable to the air, America stating that iodised salt is apt to lose weight when packed in paper or cloth.

In most cases iodised salt is used as a prophylactic only. In Italy it is distributed to the whole population instead of ordinary salt in certain districts subject to endemic goitre, no inconvenience having been suffered from its use. Where iodised salt is not employed iodine is given in the form of chocolate tablets, but this is looked upon as incomplete because it is impossible to distribute sweets to the whole population. In the Netherlands iodised salt is regularly administered as a prophylactic in districts where drinking water or articles of food are deficient in iodine. There is considerable diversity of opinion as to the desirability of giving iodine in the form of sweets. Germany and the Netherlands are definitely unfavourable to this type of treatment, being of the opinion that there is danger of overdosage. Switzerland makes use of iodised salt only as a preventive, but sweets containing Iodostarin—an organic compound of iodine—are used both for prophylactic and curative purposes. One sweet a week, containing 1 mg. of iodostarin, is given as a prophylactic to school-children and military recruits, and sweets containing 3 mg. of iodostarin are used curatively. The report recommends that iodised sweets should not be on sale except under medical direction. Swedish school-children at Hofors who show no signs of goitre undergo a short course of treatment with iodised sweets every spring and autumn, one sweet a day being given for ten days. This is equivalent to a dosage of 4 grammes of iodide of sodium a year. The only inconvenience noted is an occasional transitory cold in the head, and doctors report that goitre is much less frequent among the children of Hofors than formerly. In America iodised salt is only recommended for the prevention of simple goitre. Speaking generally, the idea of iodised sweets has been abandoned, but in New Jersey chocolate tablets containing 5 to 10 mg. of iodine are given to children once a week all the year round.

The closely related problem of insufficient iodine in the breeding of livestock is dealt with in an interesting brochure by Mr. Frank Corrie, B.Sc., issued by the Nitrate Corporation of Chile, Limited. In our own columns recently (May 4th, p. 1029) Dr. Donald Hunter has alluded to the danger in certain parts of the world of animals failing to secure enough iodine in their food. In the Yellowstone River valley numbers of young pigs, lambs, calves, and colts used to die as the result of thyroid disease, and this calamity was averted when the shortage of iodine in the soil was made up for by giving sodium or potassium iodide to pregnant animals. Later the same problem arose in the Pemberton valley of British Columbia, where white settlers noticed as they ascended the valley that the incidence of goitre and fœtal athyrosis increased in their animals. Poultry appeared to thrive, but their eggs though producing embryos failed to hatch out. All goitres disappeared and no further trouble in rearing stock or fowls occurred after iodine was added to their ration. For two dollars a year sufficient iodine could be procured to keep 100 cattle, 12 horses, 30 pigs, 200 chickens and all their progeny free from goitre. Mr. Corrie summarises the experience of practical stock-breeders, with many of whom he is in correspondence. There is no doubt, he says, that even in many districts of this country the iodine content of the soil is inadequate to provide growing crops with a sufficiency of iodine to meet the requirements of stock. The artificial foods now so commonly used contain, he suggests, too little iodine to meet the needs of highly productive animals. Guano or Chilean nitrate of soda may help, but the judicious use of iodine in feeding stock is the best and cheapest form of insurance policy for the breeder. Mr. Corrie recommends a stock solution made by dissolving three-quarters of an ounce of potassium iodide in seven pints of water. Of this solution the daily ration for a horse is three teaspoonfuls, for a pig two, for a goat one, for a dog a quarter, for a rabbit one-twentieth; and much evidence is set out in the pamphlet, with abundant illustration, to show that these doses are effective.

BUSTS OF KOCH AND RÖNTGEN

THE Deutches Museum in Munich celebrated [1] last month the tenth anniversary of its foundation, and opportunity has been taken to place busts of Robert Koch and Konrad Röntgen in the chamber of honour. The bust of Koch which is by Prof. Georg Müller bears the inscription: "The discoverer of the tubercle bacillus and of other disease producers. In strict logical sequence he showed the ways to effective attack on the diseases that plague mankind." The dedication was made by Ministerial Director, Dr. Gütt. The twenty-fifth anniversary of Koch's death on May 27th has given another German medical weekly [2] occasion for an assessment of his work by the director of the Robert Koch Institute in Berlin. It was Koch, says Dr. Gundel, whose revolutionary genius let in the light to the causes and method of spread of infectious disease. The bust of Röntgen by Prof. Hermann Hahn was presented to the Munich Museum by Prof. Harms in the name of the University of Würzburg; the inscription runs: "The rays which bear his name show the physician the interior of the living body; they show the engineer the interior of his working materials; they have given the scientist a knowledge of the inner structure of the atom." The German Chemical Society proposes to present to the Museum memorial busts of F. Wöhler and Adolph v. Baeyer.

THE Ingleby lectures of the University of Birmingham will be given by Dr. K. D. Wilkinson, professor of therapeutics in the University, on Thursdays, June 13th and 20th, at 4 P.M., in the medical lecture theatre, Edmund-street. The subject is acute rheumatism and its results, and members of the medical profession are invited.

IT is proposed that a two-day conference shall be held at the London School of Hygiene and Tropical Medicine each July, so that medical officers in industry on leave from the tropics may be able to meet their colleagues and discuss their problems. Medical officers practising on plantations, mines, railways, hydro-electric and construction schemes, and development companies generally, will be welcomed. This year the conference will be held on July 9th and 10th. Those who intend to be present should write to the organising secretary, Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, Keppel-street, W.C. 1.

[1] Münch. med. Woch., May 9th, p. 770.
[2] Deut. med. Woch., May 24th, p. 822.

PROGNOSIS

A Series of Signed Articles contributed by invitation

LV.—PROGNOSIS IN DIPHTHERIA

DIPHTHERIA although a preventable disease still ranks in this country as one of the formidable acute specific infections of childhood. Owing to the greater opportunities for infection, the highest incidence of the disease occurs shortly after school age, but the maximum case mortality, which at all ages is some 5 per cent., falls upon those of pre-school age. The age of the patient is therefore an important factor in prognosis. Clinical diphtheria, as distinct from a carrier state, implies the formation of pseudo-membrane by virulent strains of the *C. diphtheriæ* and a varying degree of toxæmia. There is considerable evidence of the frequent association of the *gravis* (starch fermenting) and *intermediate* (barred) strains of the bacillus, described by Anderson, McLeod, and their co-workers, with diphtheria of severe clinical type; but these strains are not invariably causal of severe attacks nor are those due to the *mitis* strain consistently mild. Generally speaking, however, gravis and intermediate infections tend to produce severe clinical attacks with rapid advance of toxæmia. Since diphtheria antitoxin adsorbs circulating toxin, checks the further spread of membrane (upon the extent of which toxæmia depends), and influences its early separation, prognosis is largely dictated by the promptness with which an adequate dose is injected by a route which is also adequate in the particular circumstances. Antitoxin can only prevent *further* damage by toxin; it cannot undo damage already brought about. Therefore the success of antitoxin therapy must depend primarily upon early diagnosis. This in turn depends not only upon the clinical judgment of the practitioner but upon the stage at which he is permitted to exercise it. The prognosis may have become virtually hopeless before medical aid is sought. Nevertheless, be the patient seen early or late, the existence of membrane, however indefinite or merely "suspicious," in the one case, or however old and necrotic in the other, should imply, without exception and without delay, the administration of antitoxin. But whereas in early cases a moderate dose by the intramuscular route ensures a favourable prognosis, in later ones the only chance of converting "grave" into "less grave" may be the injection of a massive dose intravenously. Here further damage must be stemmed, not after a further delay of 8 to 12 hours, which the intramuscular route imposes before there is effective concentration in the tissues, but immediately. Adequate dosage is essential; but an adequate dose injected by an inadequate route in the critical case may improve prognosis but little if at all. Swabbing, if allowed to usurp the place of clinical judgment, is a definite factor in increasing the gravity of prognosis in diphtheria; a doctor who tries to finesse with a swab when the trump card of antitoxin should be played, only too often, loses the trick.

Nasal diphtheria debilitates the child by a subacute toxic process and he is a danger to others rather than in immediate danger himself. A small dose of antitoxin by the intramuscular route speedily clears up the condition, the prognosis of which is very favourable.

Laryngeal diphtheria is sometimes primary but more usually secondary to a post-nasal focus in the infant or a faucial focus in the older child. The younger the child the more likely is the laryngeal form to occur and to result in a degree of obstruction necessitating *in addition* to antitoxin some form of intervention and to terminate in broncho-pneumonia caused by the downward spread of the specific and concomitant organisms. In private practice intervention must almost necessarily be tracheotomy with all its immediate dangers and the enhanced risk of subsequent broncho-pneumonia. In hospital practice prognosis in laryngeal diphtheria has become more favourable as the result of the intravenous injection of antitoxin, wherever possible, and the substitution, in suitable cases, of direct laryngoscopy and mechanical suction for intubation or tracheotomy. Not all cases are suitable or respond satisfactorily to this procedure. Tracheotomy may have to be performed in the end, but it is not infrequently obviated. Even in the mildest case of laryngeal diphtheria which appears to be responding to antitoxin, rest, and steam, the immediate prognosis should be very guarded. The sudden separation of membrane may cause the most urgent obstruction when all seems to be going well. Occasionally, too, there is a return of inspiratory stridor about the tenth day as part of the syndrome of serum sickness. Further, it has to be borne in mind that the child is still at risk from the late results of toxæmia especially, of course, if there was an associated extralaryngeal focus.

Faucial Diphtheria.—Given timely specific and skilled nursing treatment, the patient suffering from faucial diphtheria more often than not makes an uninterrupted recovery. But a minority of patients who have come under treatment late may, depending upon the initial severity of the infection and the time which this has gone unchecked, (1) die in the phase of initial toxæmia from acute myocarditis; (2) reach the stage of "convalescence" only to succumb after a succession of non-lethal forms of post-diphtheritic paralyses either to diaphragmatic paralysis or, more commonly, to myocarditis associated or not with heart-block; or (3) run the gauntlet of all these complications and at length recover completely. The clinical severity of faucial diphtheria is to be assessed by the extent and apparent age of the membrane and the concomitant local and general signs of toxæmia. The local signs are extensive and old membrane, fœtor, hyperæmia, and œdema of the fauces, and cervical adenitis and periadenitis. The general signs are prostration, pallor, and apathy or, in extreme cases, restlessness and delirium. The pulse is rapid, of low tension, and possibly irregular; pyrexia is slight or absent. Albuminuria is the rule. In the milder grades of the disease antitoxin by the intramuscular route and complete rest for some weeks suffices, but in the toxic case the intravenous injection of anything from 50,000 to 150,000 units is essential. The toxæmia of diphtheria results in profound disturbance of carbohydrate metabolism. Blood-sugar tolerance curves are of diabetic type. The greater the lag shown by the curves the worse the prognosis. In the toxic case prognosis, immediate and remote, is definitely improved by the exhibition, in addition to antitoxin, of glucose at first intravenously, and then, for the next ten days at least by mouth. The occurrence of post-diphtheritic paralysis of any type and however slight in degree is to be regarded as a danger signal—an indication

of the fixation of toxin, the extent and gravity of which will only be fully revealed in the succeeding days. Palatal paralysis is usually first noted, and whatever the stage of the illness, absolute rest in a recumbent position without pillow must at once be resumed.

The two events to be feared are cardiac failure and diaphragmatic paralysis. The clinical onset of either is sudden and the prognosis of both very grave.

In hospital practice early warning of impending *cardiac trouble* is sometimes obtainable from serial electrocardiograms, but the cardinal clinical symptoms are *vomiting*, *epicardial pain*, and a subnormal temperature. The signs are those of cardiac dilatation associated in many cases with heart-block of varying grades and enlargement of the liver. Prompt resort or return to intravenous glucose therapy is essential and sometimes results in recovery in an apparently hopeless case. Adrenaline or ephedrine may be of value, and a very small dose of morphia (1/32 to 1/16 of a grain) by affording the child rest and relief from the distressing anginal pain occasionally helps to turn the scale. The ordinary cardiac drugs are of no value in this condition.

Diaphragmatic paralysis, which is not uncommonly associated with pharyngeal paralysis and gravely damaged heart muscle, may be of short duration, and the maintenance of a continuous supply of oxygen for 48 hours may tide the child over; but the prognosis is grave in the extreme. Evidence has been obtained in the wards of this hospital that the Drinker respirator, combined, if pharyngeal paralysis coexists, with periodical pharyngeal suction by means of an electric pump, is capable of saving some patients who otherwise, from the observed duration of the condition, must inevitably have died.

To hurry the convalescence of the diphtheria patient may be to ensure lasting myocardial weakness.

Even in the mild types of the disease a month of recumbency, followed by very gradual postural progress for the next fortnight, should be regarded as the minimum. A few cases of permanent heart-block have been recorded, and the rare post-diphtheritic hemiplegia results as a rule in recovery with permanent loss of function but, generally speaking, the post-diphtheritic lesions if they do not kill the patient at the time, in the end heal completely.

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SPECIAL ARTICLES

EXAMINATION OF MILK PRODUCTS FOR TUBERCLE BACILLI AND BRUCELLA ABORTUS

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THE object of this investigation has been to inquire further into the incidence of tubercle bacilli and *Br. abortus* in dairy products, in view of the common occurrence of these two contaminants in raw bulk milk (Pullinger, 1934).

The following products have been examined.

1. *Cream.*—Fifty c.cm. samples were examined, each representing from 150 to 200 gallons of cream, prepared from milk produced in Cheshire, Wiltshire, or Somerset. The fat content of the cream tested was about 50 per cent. Cream from each supply was tested when raw and after flash pasteurisation at 180° F. (82·5° C.). The pasteurised samples represent the cream delivered for sale in London.

2. *Butter.*—Samples of factory, imported, and farmhouse butter were examined. Quarter-pound packets of salted and unsalted factory-made butter, prepared in Wiltshire, were picked at random from stock and were tested within 48 hours of manufacture. The samples were taken on different days. The cream used in the preparation of this butter had been flash pasteurised. In the case of imported butter sample plugs were taken from 1 cwt. consignments. Unfortunately, the country of origin of these samples is not known, nor could it be ascertained whether they were prepared from pasteurised cream. Farmhouse butter, prepared from raw cream at different farms, was received as 1 lb. samples and was examined within 48 hours of manufacture.

3. *Soft cheese.*—Packets of "Little Wilts" and "Bondon" cheese, as issued for sale, were examined, two packets being picked at random from stock each day. A few samples of each were examined immediately after manufacture. The majority were stored for two days, this being the minimum period allowed to elapse prior to sale. "Little Wilts" cheese is prepared from raw milk and "Bondon" from skimmed milk by a natural lactic fermentation process.

4. *Hard cheese.*—(*a*) Cheddar cheese, which is manufactured from raw or pasteurised milk, was examined when 7 days old. (*b*) Cheshire cheese, which is manufactured from raw milk, was examined when 7 days old; a second series was tested when 7, 21, and 49 days old; and a third series 3 months after manufacture, when ready for sale. (*c*) Stilton cheese, which is manufactured from raw milk, was tested when ready for sale, that is when more than 3 months old.

With the hard cheese, sampling was effected by taking two plugs from different portions of each cheese.

TECHNIQUE

The products were submitted to the biological test with guinea-pigs. Cream was inoculated through a wide-bore hypodermic needle, 1 c.cm. being injected intramuscularly into each thigh. Butter was melted at 40° C., and similar injections were made with syringes that had been warmed. Cheese was worked into a paste and then an emulsion, by grinding it in a sterile mortar with sterile distilled water. Saline proved unsuitable for the emulsification of cheese owing to the formation of a gummy precipitate. One c.cm. quantities of the emulsion were inoculated into each thigh through a wide-bore needle. Cream samples were each inoculated into a single guinea-pig; samples of the other products were each inoculated into 2 guinea-pigs. The technique of examining these animals was similar to that previously described.[1]

RESULTS

Results of the investigation are summarised in the Table.

1. *Cream.*—Out of 31 samples of raw cream, 16 contained tubercle bacilli and 11 *Br. abortus*. Of the samples which were contaminated, 8 contained both organisms, 8 tubercle bacilli alone, and 3 *Br. abortus* alone. Twelve samples were apparently free from both contaminants. Thirteen of the 31 samples came from

milk produced in Wiltshire or Somerset; of these, 2 contained tubercle bacilli and 2 *Br. abortus*. Out of 18 samples from Cheshire, 14 contained tubercle bacilli and 9 *Br. abortus*.

All 35 samples of pasteurised cream were free from these contaminants.

Out of 35 guinea-pigs inoculated with raw cream, 4 died from intercurrent infections, while none of the 35 inoculated with pasteurised cream died prematurely.

Examination of Milk Products for Tubercle Bacilli and Br. abortus

Product and class.	Remarks.	No. of samples.	Tubercle bacilli.		*Br. abortus.*		Both contaminants absent.
			+	-	+	-	
Cream.							
Raw		31	16	15	11	20	12
Pasteurised		35	0	35	0	35	35
Butter.							
Factory	Salted	10	0	10	0	10	10
,,	Unsalted	10	0	10	0	10	10
Farmhouse		10	0	10	0	10	10
Imported		9	0	9	0	9	9
Cheese.							
"Little Wilts"	Fresh	3	0	3	0	3	3
	2 days old	14	0	14	0	14	14
Bondon	Fresh	3	0	3	0	3	3
	2 days old	14	0	14	0	14	14
Cheddar	7 days old	3	0	3	0	3	3
Cheshire	,,	6	2	4	1	5	4
,,	7 days old	3	2	1	2	1	1
	21 ,, ,,	3	0	3	0	3	3
	49 ,, ,,	3	0	3	0	3	3
,,	3 months old	9	0	9	0	9	9
Stilton	,,	2	0	2	0	2	2

2. *Butter.*—Twenty samples of factory, 10 of farmhouse, and 9 of imported butter were examined. Of these 39 samples, none was contaminated. Out of 78 guinea-pigs inoculated with butter, 11 died prematurely.

3. *Soft cheese.*—Seventeen samples of "Little Wilts" cheese and an equal number of samples of Bondon cheese were examined. Three samples of "Little Wilts" were forwarded for examination immediately after preparation. None of these contained tubercle bacilli or *Br. abortus*, but two samples of "Little Wilts" contained saprophytic acid-fast organisms. A second series of 14 samples of each class was examined when the cheese was two days old and ready for sale. All these samples were free from the above contaminants. Out of 68 guinea-pigs, 17 died prematurely.

4. *Hard Cheese.*—(*a*) Neither tubercle bacilli nor *Br. abortus* were isolated from samples of 3 Cheddar cheeses examined 7 days after manufacture.

(*b*) Samples were taken from 6 Cheshire cheeses when they were 7 days old; of these, 1 contained tubercle bacilli and *Br. abortus*, 1 contained tubercle bacilli alone, and 4 were free from contamination. A second series of 3 cheeses was examined when they were 7, 21, and 49 days old. At 7 days, 2 cheeses contained both tubercle bacilli and *Br. abortus*. Neither of these contaminants, however, could be isolated after 21 or 49 days of storage. A third series of 9 cheeses was examined when more than 3 months old and ready for sale and of these none was contaminated.

(*c*) Two Stilton cheeses were examined at the time of sale, when more than 3 months old. Neither was contaminated.

Out of 55 guinea-pigs inoculated with suspensions of hard cheese, 11 died prematurely.

DISCUSSION

The results of the examination of raw cream coincided with the expectation formed from an examination of bulk milk from the two sources of supply. As previously reported,[1] 21 per cent. of herd bulk milk samples from Cheshire contained tubercle bacilli and 37 per cent. *Br. abortus*. In herd milks from Somerset the percentages were 2 and 19 respectively. Flash pasteurisation of cream in shallow layers at 180° F. (82·5° C.), if efficiently carried out, is shown to be destructive of pathogenic contaminants.

Since factory-made butter is prepared from pasteurised cream, the absence of contaminants was to be expected. As regards butter prepared from unpasteurised cream, only a limited number of samples could be examined. J. Smith (1934)[2] examined 51 samples of "locally prepared" butter and found tubercle bacilli in 5 instances. J. W. Edington (1934),[3] working with larger quantities of butter and using a somewhat elaborate technique, found that out of 40 samples of imported butter 1 contained tubercle bacilli. The imported butter examined by this worker was thought to have been prepared from pasteurised milk. The findings of Smith and of Edington considered in conjunction with the high incidence of pathogenic contaminants in raw cream, indicate that these organisms must be frequently present in butter made from unpasteurised cream. Efficient pasteurisation of cream is a safeguard against such contamination.

Although no pathogenic contaminants were found in soft cheese, the fact that saprophytic acid-fast organisms were isolated from very fresh cheese may suggest that tubercle bacilli also are able to survive the original manufacturing process. On the other hand, the fact that acid-fast organisms were not found in 28 samples of soft cheese which had been stored for 2 days suggests that autosterilisation occurs rapidly during the ripening period. A period of 2 days, however, would appear to be a very narrow margin of safety for the destruction of pathogens.

The fact that tubercle bacilli and *Br. abortus* were found in Cheshire cheese 7 days old, but not when 21 or more days old, indicates that, in the case of hard cheese also, autosterilisation takes place. Since such cheese must be allowed to mature for three months or more before it is sold, the margin of safety would appear to be adequate. The reason for autosterilisation of cheese is at present obscure. In the case of hard cheese it is known that the hydrogen-ion concentration changes during the course of ripening from pH 4·6 to 6·2, and it seems likely that the high hydrogen-ion concentration during the early stages of ripening may explain the destruction of tubercle bacilli.

No losses from intercurrent infection amongst guinea-pigs inoculated with pasteurised cream were experienced. This is similar to the very low mortality of 2·5 per cent. which followed the inoculation of 78 guinea-pigs with pasteurised milk.[1] The mortality following the inoculation of raw cream resembled that of 11·5 per cent. resulting from the inoculation of raw rail-tank milk. The inoculation of butter and cheese was followed by a high mortality of 15 to 25 per cent.

SUMMARY

1. The occurrence of tubercle bacilli and of *Br. abortus* in raw cream is noted.

2. Contaminants were not found in any of the samples of butter examined, but the majority of samples were prepared from pasteurised cream.

3. Tubercle bacilli and *Br. abortus* may be found in hard or soft cheese immediately after manufacture,

but auto-sterilisation occurs during the ripening period. In the case of soft cheese the ripening period is short, and the possible danger of tubercle bacilli surviving is correspondingly greater.

4. Efficient pasteurisation of milk or cream is an adequate precaution against the survival of tubercle bacilli and *Br. abortus*. Where the heating process does not interfere with subsequent manufacture of milk products such pasteurisation should be carried out.

5. The losses from intercurrent infections, amongst guinea-pigs inoculated with the milk products examined, are noted; and the mortalities are compared with those which follow the inoculation of milk.

I am indebted to the directors of United Dairies Limited for their interest and financial support, and to Mr. E. B. Anderson, M.Sc., for arranging for the supply of samples, and for providing information relating to products examined and details of manufacture.

REFERENCES

1. Pullinger, E. J.: THE LANCET, 1934, i., 967.
2. Edington, J. W.: Ibid., 1934, ii., 81.
3. Smith, J.: Jour. Hyg., 1934, xxxiv., 242.

THE MIDDLESEX HOSPITAL

As briefly announced last week, the new buildings of the Middlesex Hospital were opened on Wednesday, May 29th, by H.R.H. the Duke of York, when His Royal Highness was able to congratulate the governors of the institution on having raised the whole capital cost required. The Duke, who was accompanied by the Duchess, was met outside the main entrance by the chairman of the hospital, Prince Arthur of Connaught, and the terrace in the courtyard served as a platform for the speakers and guests of honour.

Prince Arthur of Connaught, in welcoming His Royal Highness, detailed some of the more important steps which had marked the progress of the hospital. He spoke of Sir John Bland-Sutton's Institute as one of the most valuable gifts ever made to medicine, valuable in itself and in its inspiration to others. This Institute was followed by the Courtauld Institute of Biochemistry, while Mr. Courtauld had also provided the science of medicine, in association with the Middlesex Hospital, with another new conception, the Clinical Research Unit where the professors of pathology, biochemistry, and physiology were directly in charge, and also in association with members of the clinical staff of the hospital. Of the developments in X ray and radiotherapy work, Prince Arthur said that the medical staff of the Middlesex were recognising the two different aspects presented—the therapeutic and the diagnostic—and named the benefactors whose great generosity was enabling both branches to develop. The radiotherapy department, the gift of Mr. E. W. Meyerstein, would, he said, shortly come into being, when the previous visits of inspection by the staff and selected experts to other scientific centres would assure to the hospital a first-rate department. The X ray diagnostic department, the gift of Mr. W. H. Collins, and already in operation, contained a plant unrivalled in other institutions. Prominent features in the work of the hospital which Prince Arthur mentioned, in illustration of its wide development, were the establishment of a complete unit to follow fracture cases from start to finish; and the construction of a model nurses' home, to which home Dr. Essex Wynter had added the perfect finishing touch by the presentation of his beautiful house, Bartholomew Manor, Newbury, as a home for retired nurses.

The Duke of York, in declaring the buildings open, recalled in particular the long association of the Middlesex Hospital in attempts to relieve cancer and to elucidate its problems.

"As President of the British Empire Cancer Campaign," he said, "I congratulate the Middlesex Hospital in playing a very important and distinguished part in the fight against a dread disease. I am happy to see with us to-day the Earl of Athlone, who was formerly chairman of this hospital, and was the first chairman of the council of the Campaign. The importance of early treatment of cancer has been urged again and again by yourselves and by your kindred research centres. This new Middlesex Hospital, thanks to its most generous supporters, has been enabled to embody in its scheme of reconstruction provision for the most modern treatment of all branches of this noble work. Cancer is an evil which must and will be crushed, and I would like to see a Cancer Research Centre such as yours established in every university teaching hospital, not only in this country, but throughout the Empire."

His Royal Highness dwelt on the value of close coöperation in a teaching hospital between the medical school and the medical, surgical, and research work. He recognised the administration of the school compelled long and arduous work on the part of those supervising its welfare, and congratulated all those who had contributed to the prestige of the school.

Of Prince Arthur of Connaught's work he said:

"I am sure I am expressing the wish of everyone here to-day in congratulating you on your success of your appeal to those generous supporters of our voluntary hospital system. This response from so many kind-hearted men and women has enabled this beautiful sanctuary to be raised by skilful workmen for the relief of suffering humanity. I recognise the fact that during the greater part of that time you have had to contend with national depression and financial difficulties. I feel convinced that just as you have succeeded in raising the huge capital sum for these buildings, so you will find the money that will enable you to make the best use of them."

His Royal Highness declared the hospital open.

Mr. W. Sampson Handley, senior surgeon of the hospital and chairman of the medical committee, said that they believed that research was the key to progress, and that the hospital had come to be recognised as a place where the medicine and surgery of the future were fashioned. Certain of the basic principles of the treatment of cancer were first worked out in the Barnato Laboratories, and of late years two possible routes to the problem of the causation of cancer had been supplied by the Bland-Sutton Institute. The complete success of their rebuilding fund might be partly interpreted as a public endorsement of their board's research policy and an acknowledgment of its success. In their preoccupation with research the interest of the individual patient remained dominant, and it was a daily pleasure to observe how they were treated by nurses and servants of the hospital.

Mr. A. E. Webb-Johnson, chairman of the Plans Committee of the hospital, read a letter announcing a subscription of £50,000 towards the new X ray therapy department from Mr. Meyerstein, and also announced that Mr. W. H. Collins had promised to give a like sum for the endowment of his department of X ray diagnosis. He added that when the history of the hospital came to be written it must be remembered that Prince Arthur had accepted the chairmanship with the responsibility of raising the enormous sum of money for rebuilding which had been obtained.

The proceedings closed with the National Anthem, when their Royal Highnesses made a tour of the new buildings.

GENERAL MEDICAL COUNCIL

SUMMER SESSION, MAY 28TH-31ST, 1935

Cases referred by the Dental Board

The Case of Walter William Holmes, registered as of 261, Albert-road, Jarrow, Co. Durham, "Dentist 1921."

The Dental Board had investigated and found proved charges alleging that Mr. Holmes had induced another registered dentist to sign a dental letter stating that he had examined and intended to treat a patient who had, in fact, been examined and treated by Mr. Holmes, who had been disqualified for such work by the Department of Health for Scotland. There had been no complainant, and respondent had not attended or been represented. The Board recommended that Mr. Holmes's name be erased from the Dentists Register.

Mr. Harper, solicitor to the Dental Board, read a letter from respondent, who was not present, and testimonials. After deliberation in camera the President announced that the Registrar had been directed to erase Mr. Holmes's name from the Dentists Register.

The Case of Robert Marley, registered as of 22, St. Luke's-road, Pontnewynydd, Mon., "Dentist 1921."

The Dental Board had investigated a charge of allowing an unregistered person to practise in his name. There had been no complainant; respondent had attended without legal representatives. The Board recommended the erasure of Mr. Marley's name from the Register.

Mr. Marley did not attend and was not represented. A letter from him was read by Mr. F. P. Winterbotham, Mr. Harper's partner. After deliberation in camera the President announced that the name would be erased from the Dentists Register.

Penal Cases Adjourned from Previous Sessions

Adjourned from June 1st, 1934, the Case of George Francis Donaldson Perrott, registered as of 25, Bromefield, Stanmore, Middlesex, M.R.C.S. Eng. 1928, L.R.C.P. Lond. 1928, who had been summoned to appear before the Council on the following charge:—

"That you were convicted of the following misdemeanours, viz.: (1) On April 13th, 1933, at the Staple Hill, Bristol, Police-court, of being in charge of a motor-car when under the influence of drink to such an extent as to be incapable of having proper control, and were fined £50 and £2 6*s*. costs and your licence suspended for five years. (2) On Nov. 17th, 1933, at the Marylebone Police-court, of being drunk and disorderly, and were fined 10*s*. 6*d*. or seven days' imprisonment."

That had been the third time Mr. Perrott had appeared, and he had been put on two years' probation, requiring testimonials at the end of one year.

Mr. Perrott did not attend the present session, and was not represented. Mr. Harper, the Council's solicitor, said that no further complaint had been received, and satisfactory testimonials had been sent. The President thought the Council might be satisfied with this intermediate report and note its reception.

Adjourned from Nov. 29th, 1933, and Nov. 28th, 1934, the Case of James Scott Webster, registered as of 31, Bank-road, Bootle, Liverpool, M.B., Ch.B. 1928, U.Edin., who had been summoned to appear before the Council on two convictions for offences against the Dangerous Drugs Act.

The Council had found the charges proved and had postponed judgment until November, 1934. Mr. Webster had been too ill to attend then, and the case had therefore been again postponed. Mr. Webster now attended, and the facts were laid before the Council by Mr. Winterbotham, who read five testimonials. After putting a number of questions to Mr. Webster, and after deliberation in camera, the President announced that the Council had not seen fit to direct the erasure of Mr. Webster's name.

Adjourned from Nov. 28th, 1933, May 29th, 1934, and Nov. 28th, 1934, the Case of Victor Cecil Tughan, registered as of 4, Stanton-court, Greenhill, Weymouth, M.R.C.S. Eng. 1925, L.R.C.P. Lond. 1925, who had appeared before the Council after convictions for being under the influence of drink while in charge of a car.

At the conclusion of the hearing on May 29th, 1934, the President had announced the decision of the Council as follows:—

"Mr. Tughan: I have to announce that the convictions alleged against you in the notice of inquiry have been proved to the satisfaction of the Council. These convictions indicate habits which are discreditable, as you yourself admit, to the profession. In order to give you an opportunity of reconsidering your habits and your conduct, the Council have postponed judgment on these convictions until November next. Before that date you will be required to send to the Registrar of the Council, for their use, the names of certain professional and other persons of standing in your neighbourhood who may be willing on application to testify as to their knowledge of your habits and conduct in the interval."

At the conclusion of the hearing on Nov. 28th, 1934, the President had announced the decision of the Council as follows:—

"Mr. Tughan: The Council have decided to postpone further consideration of this case until the May Session, 1935. They wish me to point out to you that you have not, apparently, fully appreciated the importance of furnishing testimony to your conduct from persons who are fully qualified to give it. For instance, you say you have been acting as locum tenens to a number of practitioners. Testimonials from practitioners who were in that close professional relationship to you, among others, would have been useful, and you will no doubt bear that in mind six months hence."

Mr. Tughan attended. Mr. Harper explained that Mr. Tughan had for six months been resident whole-time medical officer at a private home for paying mental patients, and had submitted testimonials from colleagues on the staff. After deliberation in camera the President announced that the Council had not seen fit to direct the erasure of the name of Victor Cecil Tughan.

Adjourned from June 1st, 1934, the Case of William Samuel Dixon, registered as of The Surgery, Fifth-street, Horden, Co. Durham, M.B., B.Ch. 1923, U.Dub., who had been summoned to appear before the Council on charges of canvassing which the Council had found proved. Judgment, however, had been postponed. The complainants had been The London and Counties Medical Protection Society, on behalf of three doctors.

Mr. Dixon attended, accompanied by Mr. O. Hempson, solicitor, on behalf of the Medical Defence Union.

Mr. Harper, for the Council, explained that the complainants did not appear now, and that two of the three doctors had no further complaint to make. Dr. A. McL. Wilson, however, had sent a letter from his solicitors proffering further charges against Mr. Dixon—not of canvassing, but of violation of medical etiquette. This letter had been received three days

before, quite out of time by the Standing Orders. Mr. Harper read this letter, and a later one from Dr. Wilson himself. Mr. Hempson raised no objection and said he had, since hearing of the letter the day before, succeeded in bringing evidence on both the complaints, although they were, he said, utterly trivial and utterly malicious. The Council decided to proceed, and Dr. Wilson entered the witness-box and gave details of the complaints, stating that Mr. Dixon had enticed away two of his patients. Mr. Hempson cross-examined, and the legal assessor asked a number of questions as to Dr. Wilson's object in bringing these fresh complaints.

Mr. Hempson called Mr. Dixon, who gave his own account of the circumstances; one case had been a serious emergency, and he had given first aid only; the other patient had absolutely refused to see Dr. Wilson. He had communicated with Dr. Wilson in both cases. The mother of the first patient and the husband of the second were called and confirmed Mr. Dixon's evidence. Mr. Hempson briefly addressed the Council, urging that the complaints had arisen out of vindictiveness, and that the demeanour of complainant and witnesses spoke for themselves. He put in testimonials to Mr. Dixon's conduct since the Council's first inquiry.

The Council did not see fit to erase Mr. Dixon's name.

New Penal Cases

CONVICTIONS FOR DRUNKENNESS

The Case of Alexander Beck Cluckie, registered as of 25, Brock-street, Bath, M.B., Ch.B. 1908, U.Glasg., who had been summoned to appear before the Council on the following charge:—

"That you were convicted at the Bath City Police-court of the following misdemeanours, viz.: (1) On June 26th, 1922, of being drunk while in charge of a motor-car, and were fined 40*s.* and £10 10*s.* costs (date of offence, June 3rd, 1922); (2) On Nov. 14th, 1934, of driving a motor-car without a driving licence, and were fined 5*s.* (date of offence, Nov. 3rd, 1934); and (3) On Jan. 15th, 1935, (*a*) of being under the influence of drink to such an extent as to be incapable of having proper control of a motor vehicle of which you were in charge, and were fined £20 and £2 2*s.* special costs and disqualified for holding a licence for five years (date of offence, Jan. 7th, 1935), (*b*) of driving a motor-car while under the influence of drink and were fined £25 and £3 3*s.* special costs and disqualified for holding a licence for one year (date of offence, Jan. 14th, 1935)."

Dr. Cluckie appeared, but was not accompanied by counsel. Mr. Winterbotham laid the facts before the Council, and read a letter from Dr. Cluckie's solicitors setting forth extenuating circumstances. Testimonials from professional colleagues were also read, and it was stated that Dr. Cluckie had become a total abstainer.

Dr. Cluckie said he had been suffering from insomnia and low blood pressure before the convictions; that he had never taken alcohol during consulting hours; that he had since been under treatment and was now in normal health. He was determined never to take alcohol again.

After deliberation in camera the President announced that the Council had decided to postpone judgment for a year, subject to the production of testimonials at that time.

The Case of William Graham, registered as of Bridge House, Manor-road, Tynemouth, M.B., B.S. 1923, U.Durh., who was summoned before the Council as a consequence of his conviction on Jan. 28th of this year before the Newcastle Police-court on a number of charges connected with the driving of a motor-car on Jan. 19th while under the influence of drink.

Mr. Graham appeared, accompanied by Mr. Hempson, on behalf of the Medical Defence Union. Mr. Harper, laying the facts before the Council, said that Mr. Graham had been before the Council a year ago with reference to a conviction of manslaughter at Newcastle, and had been discharged. On that occasion there had been no question of drink; he had fallen asleep while driving. Mr. Hempson, on the respondent's behalf, said that at the time of the manslaughter Mr. Graham had been seriously overworked, and in falling asleep at the wheel had not been guilty of any offence as a doctor. In the second instance he had been very unwell, suffering from chronic laryngitis and running a temperature. He had taken one whisky and soda as a restorative, and it had gone to his head. This was an isolated instance, and not the ordinary case of a man given to over-indulgence. Since that date Mr. Graham had abstained from alcohol altogether, and Mr. Hempson repeated an undertaking given by the respondent. Testimonials were read from a doctor, a vicar, and a solicitor.

After deliberation in camera the President announced that the Council had decided to postpone judgment for a year, subject to the production of testimonials on demand, and warned Mr. Graham to be very careful.

The Case of Samuel Patrick McGrath, registered as of 27, St. Julian's Farm-road, West Norwood, S.E. 27, M.B., B.Ch. 1924, N.U.Irel., who had been summoned to appear before the Council after conviction on two occasions for being under the influence of drink while in charge of a motor-car.

Mr. McGrath attended, accompanied by Mr. Hempson. Mr. Winterbotham set the facts before the Council. Mr. Hempson pointed out that, at the time of the first incident, Mr. McGrath had been through a very worrying time, having received bad news of some relatives when he was working very hard. In the second incident his car had run into an obstruction at the edge of the road, and the steering-wheel had broken and struck his face, breaking his nose. He had been bleeding severely and was only half-conscious when the police had arrived. His unsteadiness of speech was explained by the blow in the face; his unsteadiness of gait by the injury to his knees where they had struck the dashboard. His local colleagues had subscribed to pay his fine and costs, and had written to him expressing sympathy. Mr. Hempson read testimonials. The Council, after deliberation, found the facts proved, but postponed judgment until May, 1936, subject to the usual provisos.

The Case of Cecil John Rhodes Morrison, registered as of c/o National Bank of India, 26, Bishopsgate, E.C. 2, L.R.C.P. Edin., 1925; L.R.C.S. Edin., 1925; L.R.F.P.S. Glasg., 1925, who had been summoned to appear before the Council on the following charge:—

"That you were convicted of the following misdemeanours, viz.: (1) At the Grays Petty Sessions, on April 13th, 1934, of being under the influence of drink and incapable of proper control of a motor-car of which you were in charge, and were fined £20 and 10*s.* 6*d.* expenses and your licence was suspended for twelve months; and (2) At the Lambeth Police-court on March 5th, 1935, of being drunk and incapable, and were fined ten shillings."

Mr. Morrison appeared but was not accompanied by a legal adviser. Mr. Harper, opening the case to the Council, said that the respondent had been cautioned by the Council in 1927 after conviction for being under the influence of drink. The respondent read a letter addressed by himself to the Council. He said

that he was now strictly teetotal, and asked the Council to give him another chance. The Council postponed judgment until May next, subject to the usual provisos, and the President reminded Mr. Morrison that control over events was largely in his own hands.

The Case of James Francis Patrick Devlin, registered as of Old Chapel House, Richmond-hill, Leeds, M.B., B.Ch. 1916, N.U. Irel., who has been summoned to appear before the Council on the following charge :—

"That you were on Jan. 16th, 1935, at the Huddersfield County Borough Police-court, convicted of the following misdemeanour, namely, of being under the influence of drink to such an extent as to be incapable of having proper control of a motor-car of which you were in charge, and were fined £20 and £3 9*s*. costs or three months' imprisonment in default, and your licence was suspended and you were disqualified for holding a licence for twelve months."

Mr. Devlin attended, accompanied by Mr. O. Hempson, solicitor. Mr. Harper, for the Council, stated that Mr. Devlin had been before the Council in 1932 having been convicted for being drunk in the public highway, for which he had been fined 5*s*., and for drunkenness in charge of a motor-car. The President had on that occasion directed some severe remarks to respondent. Mr. Devlin's defence to the present charge at the police-court had been that he had been overworked in a severe outbreak of diphtheria, and had snatched a short holiday on Boxing Day ; he had met some Irish friends at a football match, and had had several drinks with them after missing his lunch.

Mr. Hempson, on behalf of the respondent, pointed out that he was a careful and abstemious man except on isolated occasions, and said that he undertook to abstain from alcohol in any form for the future.

After deliberation in camera, the President said that the Council would give Mr. Devlin one more opportunity of overcoming the tendencies which had caused him to be summoned before them, and would postpone their judgment for twelve months, subject to the usual provisos.

TWO MISSING MICROSCOPES

The Case of Oladipo Lahanmi, registered as of 2, Levenshulme-road, Gorton, Manchester, L.M.S.S.A. Lond., 1932, who had been summoned to appear before the Council on the following charge :—

"That you were on Oct. 12th, 1934, convicted at the Liverpool City Police-court (*a*) Of feloniously stealing a 'Baker' microscope of the value of £10, the property of the Incorporated Liverpool School of Tropical Medicine, and were fined £5 or one month's imprisonment in default ; (*b*) Of feloniously stealing a 'Leitz' microscope of the value of £15, the property of the Incorporated Liverpool School of Tropical Medicine, and were fined £5 or one month's imprisonment in default, to run concurrently with the previous sentence."

The respondent attended but was not represented.

Mr. Winterbotham, reading from the respondent's written statement to the Council, said that Mr. Lahanmi had borrowed first one microscope and then the other from the school just before he sat for his examination, to help him with his work. He had then found it impossible to return them without attracting the notice of the authorities. A friend whom he had asked to help him had finally informed the authorities of the irregularity. Mr. Lahanmi produced a number of warm testimonials to his character. The President, announcing the decision of the Council, said that the convictions indicated a weakness which was a very bad start in a professional life, but that the Council had taken into consideration the respondent's youth and the other circumstances, and had postponed judgment for twelve months, subject to the usual provisos.

FALSE PRETENCES

The Case of William Forbes-Leslie, registered as of Birkwood, Banchory, Kincardineshire, M.B., C.M. 1891, U.Aberd., who had been summoned to appear before the Council on the following charge :—

"That you were convicted at the Central Criminal Court at its sessions commencing on Jan. 15th, 1935, of conspiring with other persons to obtain sums of money from Herbert Stewart Saunders and others by false pretences, and were sentenced to two years' imprisonment."

Respondent was not present, nor was he represented.

Mr. Harper outlined the case and read letters from respondent asking for adjournment. Mr. Harper observed that the Common Serjeant, in sentencing respondent, had said he was the master mind in the conspiracy and a dangerous criminal.

After deliberation in camera the President announced that the Registrar had been directed to erase from the Register the name of William Forbes-Leslie.

A CONVICTION FOR MANSLAUGHTER

The Case of Samuel Ramsay Sibbald, registered as of Mariners'-parade, Canning-place, Liverpool, M.B., Ch.B. 1900, M.D. 1905, U.Edin., who had been summoned to appear before the Council on the following charge :—

"That you were at the Liverpool Assizes, at its sessions commencing on Jan. 28th, 1935, convicted of manslaughter, and sentenced to five years' penal servitude."

Mr. Sibbald was not present or represented. Mr. Winterbotham put in the certificate of conviction and said the charge had originally been one of murder arising out of an illegal operation. The judge had said that he did not think the jury could have come to any other conclusion, and that he could conceive no worse case of the kind.

The Council directed the erasure of the respondent's name.

FALSE CERTIFICATION

The Case of Paul Vertannes, registered as of Stratford-house, Market-street, Ilkeston, Derbyshire, L.R.C.P. Edin. 1918, L.R.C.S. Edin. 1918, L.R.F.P.S. Glasg. 1918, who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, (*a*) You as medical referee to the Royal London Mutual Insurance Society, Limited, signed a confidential medical report to the said Society dated Sept. 13th, 1932, certifying that you had personally examined one Leonard Charles Lidster, and recommended the directors to accept him as a first-class life, whereas you had never seen or examined the said Leonard Charles Lidster ; (*b*) You as medical referee to the Royal London Mutual Insurance Society, Limited, signed a confidential medical report to the said Society dated Jan. 12th, 1933, certifying that you had personally examined one Horace Steel, and recommended the directors to accept him as a first-class life, whereas you had never seen or examined the said Horace Steel ; (*c*) You as medical referee to the Royal London Mutual Insurance Society, Limited, signed a confidential medical report to the said Society dated July 12th, 1932, certifying that you had personally examined one John H. Atkin, and recommended the directors to accept him as a first-class life, whereas you had never seen or examined the said John H. Atkin ; (*d*) You as medical referee to the Royal London Mutual Insurance Society, Limited, signed a confidential medical report to the Society dated Sept. 13th, 1932, certifying that you had personally examined one Walter Davy Holmes and recommended the directors to accept him as a first-class life, whereas you had never seen or examined the said Walter Davy Holmes. And that in relation to the facts so

alleged you have been guilty of infamous conduct in a professional respect."

Mr. Vertannes attended, accompanied by Mr. T. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors. There was no complainant. Mr. Harper said that the Society had forwarded the documents to the Council, and that they would be testified to by an inspector of the Society. He read out extracts from the confidential medical reports sent in by Mr. Vertannes, indicating considerable detail of examination.

Mr. Harry William Stevens testified to his statutory declaration, stating that he was the head office inspector of the Society, and had been sent to investigate alleged irregularities in Ilkeston. He discovered that the doctor had made medical reports on four persons whom he had never seen. The doctor had admitted these and other irregularities when charged with them, saying he had first been persuaded to sign reports without examination by the former district superintendent, who had committed suicide. Having once become involved, the doctor had said he could not stop.

Cross-examined by Mr. Carthew, witness said he did not know that the company had gone on sending cases to respondent. The district superintendent, Podmore, had committed suicide after about 26 years' service, and had been held in high esteem until the exposure of his irregularities. Respondent had been quite frank about his irregularities when interviewed by witness.

In reply to the Legal Assessor, he said respondent had been paid the scale fee of a guinea for each report and all the assurances had been accepted. Some of the premiums had been paid by assured and some by Podmore. Policies had been issued on the faith of the report. In reply to members through the chair, he said the irregularities extended over two or three years, but none of the policies had matured.

Mr. Harper put in statutory declarations from the assureds, and Mr. Carthew admitted that these people had never been seen by respondent. Mr. Carthew addressed the Council, admitting the facts and making a plea for mercy. He read testimonials from professional colleagues and others, pleading for clemency, and stressing the tragic condition to which the loss of respondent's wife had reduced him at the material time. He read respondent's letter to the Registrar explaining that great pressure had been brought to bear on respondent by Podmore to sign the first form, on the ground that the proposer absolutely refused to see a doctor, and that he (Podmore) would answer for it being all right. Subsequently Podmore had threatened to get respondent removed from his position as referee if he did not sign further forms.

After deliberation in camera the President announced that the Registrar had been directed to erase Mr. Vertannes's name from the Register.

UNPROFESSIONAL ADVERTISEMENT

The Case of Robert Vivian Storer, registered as of 9A, Cavendish-square, London, W. 1, M.R.C.S. Eng. 1923, L.R.C.P. Lond. 1923, who had been summoned to appear before the Council on the following charge :—

"That being a registered medical practitioner and the principal and/or director of the Cavendish Institute of Venereal Research, you have sought and seek to obtain patients or to promote your own professional advantage by advertising under the name or title of the Cavendish Institute of Venereal Research, or by being associated with or employed by the said Institute, which to your knowledge and with your sanction and acquiescence has sought and seeks to attract patients by systematically advertising in the public press, and particularly in the *Times* newspaper on various dates in March, September, October, November, and December, 1934, and February, March, and April, 1935, in the *Morning Post* newspaper on various dates in November and December, 1934, and April, 1935, and in the *Daily Telegraph* newspaper on various dates in November and December, 1934, and February, March, and April, 1935. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

Mr. Storer attended, accompanied by Mr. S. A. Kyffin, counsel, instructed by Messrs. Wilberforce, Allen, and Bryant, solicitors. There was no complainant in this case. Mr. Winterbotham, opening the case, said that the charges were frankly admitted. On Jan. 19th, 1934, Mr. Storer had commenced practice at 9A, Cavendish-square, and had shortly afterwards begun to insert advertisements in the *Times*, *Daily Telegraph*, and *Morning Post*. The first had appeared on March 1st, and they had continued to appear at intervals until the end of the year. In all he had inserted 90 in the *Times*, 32 in the *Daily Telegraph*, and 20 in the *Morning Post*. Some had been under the heading, "Hospitals and Clinics," and others in the personal column. None of the advertisements had given the name of the respondent, but they had in general described the value of the services rendered by the "Cavendish Institute of Venereal Research."

He quoted from the statutory declaration of the respondent, which stated that Mr. Storer had been contemplating partnership with another practitioner; this gentleman had expressed suspicion lest the advertisements might not be professionally proper, and Mr. Storer had therefore, on Dec. 14th, called at the offices of the Council and had a conversation with the registrar. This was before any intimation had been sent to him. He had asked the registrar whether the advertisements contravened the Warning Notice, saying that *The Lancet* had accepted one of them, but the *British Medical Journal* had refused it, and he had therefore advertised in the lay press. The registrar (said the statutory declaration) had replied that he could not give an opinion without consulting the president, but had warned him that his partner would be equally liable with himself and had said that he would write to him. On Dec. 18th respondent had received a letter from the Council and had replied, giving full particulars and inviting the opinion of the Council on the manner in which the notices could be revised. On Jan. 4th of the present year he had received a letter from the Council saying that the matter would be further considered by the authorities in due course. He had suspended the insertion of advertisements pending the decision of the Council, but hearing nothing from them for some time, he had again submitted notices to *The Lancet* and the *British Medical Journal*. The latter journal had again refused to insert his notice, so he had decided to advertise again in the lay press. The number of patients who had come to the clinic for advice had been, in all, 141. Fifty-eight had been advised that no treatment was necessary; 47 had been referred to their doctors, other specialists, or hospitals; 36 had asked the respondent to undertake their treatment. He had collected about £650 in fees, which had varied between 5*s*. and £3 3*s*. He stated the expenses of the clinic, including the announcements, at £800, and therefore observed that the enterprise had resulted in a loss. Mr. Winterbotham, however, pointed out that patients would not have come if it had not been for the advertisements.

Mr. Kyffin, on behalf of the respondent, said that the facts were admitted, and that he would not call evidence. Mr. Storer had started in general practice in 1922 and had studied in Germany, Australia, and the United States. He had done a considerable amount of original research in bacteriology and venereal disease, and had been anxious to give his profession, and through them the public, the benefit of his work. He was ready and willing to withdraw his notices from the lay press. The notice of the Council had been first drawn to the advertisements by Mr. Storer himself. When the question had been raised by his prospective partner, he had come to the Council before he had received any intimation from them.

The Legal Assessor: You must not assume, because no intimation was sent to you, that the Council had not heard of it.

Mr. Kyffin, continuing, said that any mistake Mr. Storer had made was due to his youth and enthusiasm.

The Council found that the facts had been proved and constituted infamous conduct in a professional respect, and directed the Registrar to erase Mr. Storer's name from the Register.

The Case of Valentine Robert Hirsch, registered as of 70, Westbourne-terrace, W. 2, M.R.C.S. Eng. 1916, L.R.C.P. Lond. 1916, who had been summoned to appear before the Council after conviction for three offences against the Dangerous Drugs Act. The Council's solicitor stated that respondent could not be traced, and the Council adjourned the consideration of the case until November.

AN ADVERTISING SPEECH

The Case of William Mervyn Crofton, registered as of 22, Park-square, London, N.W.1, M.B., B.S. 1904, R.U. Irel.; M.D., N.U. Irel. 1911, who had been summoned to appear before the Council on the following charge, as amended by leave of the Council:—

"That being a registered medical practitioner: At a meeting of Ophthalmic Opticians held in London on Nov. 15th, 1934, at which members of the Press were present, you made a speech in the course of which you made claims of an extravagant nature as to the benefits likely to result if the method of therapeutic immunisation practised by you at an establishment known as the Antigen Laboratory were generally practised, and accentuated the inability of other members of your profession to obtain comparable results. You thereby advertised for the purpose of obtaining patients and for promoting your own professional advantage, or in the alternative you sanctioned or acquiesced in the publication of notices commending or directing attention to your professional skill, knowledge, services, or qualifications and/or depreciating those of others. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant in this case was the Medical Defence Union, which was represented by Mr. Hempson, its solicitor. The respondent was accompanied by Mr. Roland Oliver, K.C., and Mr. Sylvester Gates, Counsel, instructed by Messrs. Partridge Sons, Partington and Holland, solicitors.

Mr. Hempson, opening the case, quoted from a statutory declaration by Dr. Percival Langford-Jones, assistant secretary of the Medical Defence Union. This declaration set out that the attention of the Union had been drawn to an account of a meeting of ophthalmic opticians which had appeared in the *Daily Express* on Nov. 16th, 1934. The account purported to quote extracts from a speech made by the respondent in which he had put forth extravagant claims for a method of treatment adopted by him. The matter had been considered by the council of the Union in January. Letters from the secretary had not been answered by the respondent.

The offending article had been headed in heavy type: "Doctor claims that he can cure blindness, diphtheria, and cancer, and reduce deaths in childbirth by 90 per cent." The report stated that respondent had claimed in a speech that a new development in a method of inoculation discovered by him enabled him to effect cures in these conditions, and also in creeping paralysis and sleepy sickness and a host of other illnesses which had defeated the efforts of medical science. He had described his method of therapeutic immunisation and declared that the body could make antidotes for its own ills, and that his method was founded on antigens from the patient's own microbes. This method of therapeutic immunisation, respondent was reported to have said, revolutionised medicine and turned it from a method of relieving symptoms to a precise science of cure. Its extension would have such an effect on human survival that the nations of the world would have to set their houses in order and agree on the population that each nation could afford to support. There followed details of the individual cases in which the respondent was reported to have claimed a cure.

The Registrar had written to respondent on Jan. 15th informing him of the complaint and asking for an explanation. Dr. Crofton had replied indignantly repudiating the suggestion that he had made the speech as an advertisement. The successes which he had mentioned in the speech had been achieved in cases treated by other practitioners, and he had been careful to dissociate them from himself. He deplored the sensational and inaccurate report published in the *Daily Express*; he had protested to a representative of that paper, but without satisfaction. There had been no justification for the report, as a typed copy of his speech, which stated that the medical profession, and not the respondent specifically, had a method of curing certain diseases, had been handed to a reporter at the meeting. In consequence of the report he had received many letters from persons who had desired to consult him. He had replied to all of them that he could not receive any patient who was not sent by a qualified medical man.

Mr. Hempson told the Council that he had a copy of the manuscript which Dr. Crofton had handed to the press representative at the meeting, and that the speech had, in fact, been quite correctly reported according to this copy. The word "I" appeared constantly, and the speech contained several criticisms of the shortcomings of his profession and tributes to the wonders which he himself had performed. No body of men could provide a more fruitful soil for such seed as respondent had sown, for ophthalmic opticians were continually in touch with the suffering public and continually being asked for advice outside their own sphere. The respondent had, on that occasion, been proposing the health of the ophthalmic opticians, but they had played no part in the speech except at the beginning and at the end.

Mr. Roland Oliver stated, and Dr. Crofton, in evidence, confirmed, that respondent had had no financial reason for advertising, as his income had been adequate without. Respondent had written direct to the Council in reply to the first letter from the Medical Defence Union. The speech might have been indiscreet; passages occurred which might have been better left out, but it had not been made in an attempt to advertise. The heavy headlines made a sensation out of what was a moderately phrased report.

The President, in announcing the decision of the Council, said that the facts had been found proved and that they brought Dr. Crofton within the terms of the Warning Notice. The Council took a serious view of the offence, but postponed their judgment until May, 1937, subject to the usual provisos. He added that any method of treatment was open to any registered medical practitioner to use, but enthusiasm was no excuse for advertising.

The British Pharmacopœia

The PHARMACOPŒIA COMMITTEE reported that Sir Henry Dale had been appointed chairman for the ensuing year. The number of copies of B.P. 1932 sold to date has been 37,631. Various subcommittees of the Pharmacopœia Commission are working on the Addendum, and conducting, in the laboratory over the G.M.C. offices, investigations for the descriptions of tests and assays and for the fixing of standards. A committee of experts has been formed to deal with vitamins and their preparations. The sections of the Pharmacopœia in which references to vitamins are made have been revised, and new monographs on products containing vitamins A, B_1, C, and D have been prepared, together with appendices describing the appropriate methods of assay. The subcommittee on serological and bacteriological products have completed their work, and have prepared descriptions of gas-gangrene antitoxin (œdematiens), gas-gangrene antitoxin (vibrion septique), staphylococcus antitoxin, antipneumococcus serum (Type I) and antipneumococcus serum (Type II), together with methods for their assay. For the vitamins and for the antitoxins and sera the international units and standard preparations have been adopted, and the requirements and tests have been brought into line with the decisions of the Permanent Commission on Biological Standardisation of the Health Organisation of the League of Nations. With the coöperation of the Rockefeller Foundation it has been possible to include tryparsamide in the Addendum. Recent discoveries on the active constituents of ergot have made it advisable for the Commission to review this drug. In 1930 the Commission received a request from the director of the Imperial Institute that the seeds of strophanthus emini, a product of Tanganyika Territory, might be considered for inclusion in the Pharmacopœia. Information regarding the chemistry, pharmacognosy, pharmacology, and clinical effects of the seeds has been collected and published.

Sir Henry Dale said that the Addendum was expected to be ready for publication next year.

VITAMINS IN THE PHARMACOPŒIA

Dr. H. G. Dain said that, having been concerned with the provision of drugs for insured persons, he had found considerable difficulty in drawing the line between foods and drugs. Since the products which contained vitamins should, in the ordinary way, be foods, the increase in the number of articles which appeared in the Pharmacopœia because of their vitamin content would make the distinction between foods and drugs more difficult. There was, of course, no reason why these substances should not be in the Pharmacopœia, but there was a question of policy—whether it was not a good thing to enable both the profession and the public to realise that vitamins should not be regarded as drugs. Though they might be necessary for the cure of certain conditions, they were necessary as foods. Some day the Government, under the advice of its then chief medical officer, would take steps to see that common articles of food should contain the vitamins that should properly belong to them if the health of the public were to be maintained. He asked Sir Henry Dale whether the food value of such constituents as were likely to be put into the Pharmacopœia were receiving the attention of the committee from the aspect of their food value.

Sir Henry Dale replied that Dr. Dain need have no apprehension. Everybody realised that a good deal of vitamin work and vitamin research lay on the borderline between therapeutics and nutrition. The changes now contemplated should make it clear that the aim of the Pharmacopœia was not to establish standards for substances which would properly be regarded as normal articles of diet and not as medicinal remedies. The present tendency, in fact, was in the other direction. Vitamins C and D, for which new monographs were to be produced, had both, between the issue of the 1932 Pharmacopœia and the preparation of the Addendum, been isolated in chemically pure form. Apart from the need for them in a normal diet, at the present stage of social development numerous cases would come under treatment by medical practitioners requiring the administration of vitamins in the most concentrated and immediately active form that could be obtained. The duty of the Pharmacopœia was to see that any potent remedy of this kind which the profession required should, apart from any question of general policy, be properly standardised, and this was the aim of the monographs in the Addendum.

Other Committee Business

The Council accepted the recommendation by the EDUCATION COMMITTEE that this committee should reconsider the regulations in regard to the registration of medical and dental students with a view to the removal of discrepancies in practice, especially those due to the revision of the curriculum.

The EXAMINATION COMMITTEE stated that the vacancies occurring in the medical services of the Crown continued to be filled by selection and that no competitive examinations had been held during 1934. It reported on the visitation of examinations held by various licensing bodies, and appended to its report some interesting tables showing the results of examinations during last year, with the numbers of students who had passed and failed.

MEDICINE AND THE LAW

Claim against Hospital and Surgeon

IN an action, heard before Mr. Justice Swift and a special jury last week, Mr. J. W. James sued the chairman and 29 members of the committee of the Royal Victoria Hospital, Folkestone, for damages for a surgical drainage-tube left in his body after an operation. He also sued Mr. W. W. Linington, the surgeon who had operated upon him. Mr. James had consulted Mr. Linington in March, 1928, and was sent to the hospital next day, where he was found to be suffering from pneumonia and pleurisy. On April 3rd Mr. Linington removed part of his rib and a drainage-tube was inserted. On May 17th the patient left the hospital, but continued to attend daily for the changing and sterilising of the tube till August, 1928, when he was discharged. Under medical advice he went abroad to Florida, where he enjoyed good health. Returning to England in May, 1929, he afterwards felt ill and eventually went to the Brompton Hospital, where he underwent an operation on March 8th, 1933. In the old wound was found a half-perished rubber drainage-tube, 4½ inches long. This was extracted

and the patient's health has been good ever since. Mr. James said that nobody at the Brompton Hospital told him what had been found, but he discovered the information by reading his case sheet, which had been inadvertently left on his bed. In support of his claim, Mr. James said he remembered an occasion after the first operation, when a nurse appeared to remove from his wound a shorter piece of tube than had been inserted. It was apparently suggested that the drainage-tube was 6 inches long, and that on this occasion a piece 1½ inches long was removed, leaving 4½ inches still in the body. Mr. James was asked why he did not make any comment; he replied that he would have got no answer from the nurse, because she was acting in the ordinary routine of the hospital. On the other side there was evidence that it was almost impossible to break surgical tubing, that it would take years to perish, and that there was nothing in the wound on which the tube could catch.

At the close of the plaintiff's case it was submitted that the committee of the Folkestone Hospital had no case to answer. Although Mr. James had paid £15, it was a voluntary donation, and there was no contract between him and the hospital. His action against the hospital was brought upon an allegation of negligence. The managers and trustees of the hospital contended that their only duty was to use due care and skill in choosing the medical staff, and to see that patients were treated by experienced doctors and nurses; the relationship of master and servant did not exist between the governors of a public hospital and the surgeons who gave their services to the hospital; during an operation the nurses were not the servants of the governors because, for the time being, they took their orders from the operating surgeon only. The judge accepted these arguments and dismissed the action as against the committee of the hospital.

There remained the claim against the operating surgeon, whose defence was conducted by the Medical Defence Union. There was only one occasion when he had put in a tube (in April, 1928); the nurses must have dressed the wound and inserted tubes dozens of times. Somebody had undoubtedly been negligent, but Mr. James had to prove beyond reasonable doubt that the cause of his injury was some negligent act by Mr. Linington. This he failed to do. The jury and the judge expressed sympathy for the plaintiff, but a verdict was given for the defendant surgeon with costs.

Introductions in Medical Partnership

In articles of medical partnership there is usually a covenant that a retiring partner shall not attempt to practise within a certain radius of the partnership premises for a named period of years without the consent of the other party. A recent case in the Chancery Court in Manchester arose out of the soliciting of former patients of the partnership by the retiring partner. Dr. A paid Dr. B £1400 for two-fifths of his practice in 1929. He bought the other three-fifths for £1556 in 1934, in which year Dr. B retired. Their articles of partnership contained the usual covenant preventing Dr. B from attending former patients within a five-mile radius. It was nevertheless agreed that, notwithstanding the covenant, Dr. B might attend not more than 12 former patients within the radius if they specially requested his personal treatment and said they were not prepared to be attended by Dr. A or his partner. Such attendances by Dr. B were to be on behalf of Dr. A's practice, and Dr. A was to receive the fees, subject to a deduction of one-third in favour of Dr. B. Some weeks before Dr. B actually retired he sent out a circular stating that, after the date of his retirement, he would be at liberty to attend any of his former patients who did not desire the services of Dr. A or his partner. Dr. A thereupon asked the court for an injunction and damages. Dr. B's conduct was a breach of the agreement, and it infringed the general law of partnership. A retiring partner who sells his interest in a medical practice is in the position of a business man who sells the goodwill of his business. The law forbids a man who sells the goodwill of his business to solicit the old customers afterwards; the seller must not "derogate from his own grant" and injure the goodwill he has sold. In the case at Manchester the court held that Dr. B had broken this principle by his circulars. An injunction was granted against Dr. B with an inquiry as to damages. In medical partnership disputes there is often a complaint that the newcomer has not been properly introduced to the patients of the partnership. This point also was raised by Dr. A in the Manchester case. The judge said it was an ordinary custom that the purchaser of a share in a medical practice should be taken round and introduced to patients. Dr. B had undertaken to introduce Dr. A and had failed to do so. The court directed an inquiry to ascertain what damages, if any, had arisen from this breach of agreement. Dr. B was ordered to pay the costs of the action, the costs of the inquiries being reserved.

The Name of a Hospital

A special meeting of the court of governors of the Anti-Vivisection Hospital at Battersea passed last week, by a majority of 42 votes to 3, three resolutions for deleting all references to antivivisection in the memorandum of association of the hospital, and for changing the official name to the Battersea General Hospital, the title by which it has already been unofficially known. Lord Ernest Hamilton, the chairman, told the meeting that, if the resolutions were not passed, the hospital might as well close its doors the next day. He attributed the heavy indebtedness of the hospital to the "ceaseless hostility" and "fanatical bigotry" of the administrators of King Edward's Hospital Fund for London, who had refused all help. He reported his negotiations with them, and announced that the changes would bring a prospect of financial assistance, though the administrators of the Fund had intimated that, even if the name of the hospital were changed, they could not guarantee support. The passing of the resolutions indeed does not conclude the matter, since the hospital governors are trustees of a fund to be used for antivivisection purposes and an application to the law courts will be necessary. Before the meeting Lord Ernest is reported to have informed an interviewer that the "antivivisection" part of the hospital's name was "a meaningless term pinned to it many years ago and a great handicap." This mild description is not easily reconciled with the provocative policy for which Battersea has stood in the past. If, however, the hospital can now surmount its financial and legal difficulties, there need be no obstacle to its fruitful coöperation with other hospitals in the service of the public.

Treasure Trove

Judicial humour has its own perils, and some playful remarks by Lord Hewart about treasure trove have drawn a correction from the official head of the British Museum. The Lord Chief Justice, who by his office is himself chief coroner of England, was invited to open the reconstructed coroner's court for the City of London in Golden-lane on May 28th. Having

explained that coroners are not exclusively concerned with inquiries into death, he went on to allude to their other surviving functions. In an allusion to treasure trove, he remarked, "If one of you has recently found good gold buried in the municipal park of your own particular domicile, I advise you that in this place it is not wise to divulge the discovery." Sir George Hill wrote to the *Times* from the British Museum to say that it would be a pity if this not very serious remark were to confirm the public in the mistaken notion that, if anybody finds a treasure, it will be taken by the police and the finder will get nothing. "It is to be feared that this delusion is shared even by coroners. The truth is that the honest finder who reports his find to the police either receives from the Crown the complete market value of his find, without deduction, or has his find returned to him." Sir George's statement does not quite tally with the notice sent by the Home Office to chief constables in 1925 when the Treasury reconsidered the arrangements for disposal of articles of treasure trove. It was then stated that if coins or other objects were required for the national museums, the finders would be paid the full antiquarian value, less a deduction of 20 per cent. But, whether or no there is a deduction, it is certainly important that treasure trove should be reported to the proper authorities and not concealed. Treasure trove, as coroners are aware, must be something intentionally hidden and not something lost or abandoned. A year ago an inquest was held on a guinea dated 1745 found on land adjoining Newbury racecourse. The jury held that this was not treasure trove, but the mere discovery of lost property. The coroner, in handing the coin back to the police, said he thought the finder was entitled to it.

SCOTLAND

(FROM OUR OWN CORRESPONDENTS)

THE HOSPITAL AS A LINK IN THE CHAIN

IF hospitals tend to get patients too late they also tend to discharge them too soon. This is an opinion freely expressed, which Dr. Brownlie, chief medical officer of the Department of Health for Scotland, has discussed in a suggestive paper communicated, in absentia, to the International Congress of Hospitals held at Rome last month. This paper was entitled The Hospital as a Link of a Systematic Public Health Chain, and includes an analysis of the case records of patients discharged "from the wards of one of the best of our voluntary hospitals," which showed that only 14 per cent. were classified by the hospital staff as "cured" as against 56 per cent. "relieved." Many of these patients had been ill for months or years prior to admission to hospital, and the condition of many of them a few months after discharge was "as bad as it ever was." Is this true generally of the medical cases discharged from the general hospitals of Great Britain? Dr. Brownlie in his paper implied that it is, and he makes some interesting constructive proposals. These proposals for a more effective service throw into relief the position of the hospital as a link in the chain, and not the last link; and he attempts precision by advocating several specific measures to prevent what he calls "the stultification of the work of the hospitals." He gives the auxiliary hospital and the convalescent home their due place; but he lays most emphasis on the development of the out-patient department as the vital centre of a hospital's activity rather than a mere filter for determining suitability for admission to its wards. This is a good conception—not new, of course, but given here a new emphasis. He regards the out-patient department as the natural locus for the diagnostic centre whose establishment has been urged by the British Medical Association and other bodies; it is the natural centre also of follow-up activities. Dr. Brownlie points out that "the scientific investigation of the hospital may have determined for the patient a new scheme of essential values suited to his particular requirements—an appropriate dietary, a definition of permissible physical activity or an insulin dosage . . . but unless steps are taken to ensure that the outside practitioner is thoroughly conversant with the hospital findings and willing to continue to give his patients intensive supervision along the prescribed lines, subsequent relapse is almost inevitable."

The position is met at some hospital centres by an organised system of communication between the hospital staffs and the practitioner and by the almoner activities of the hospital. These activities are now to be extended to all the London County Council hospitals "for the purpose not only of considering the question of contributions by patients and relatives towards the cost of treatment, but also to act as social officers to give advice to patients, and to see not only that they get well but keep well." The almoners would not claim, however, that they can take the place of the practitioner as the essential link between patient and hospital; they supplement the practitioner's work; and the development of the almoner service in no way diminishes the need for closer coöperation between practitioner and hospital. The case for the out-patient department as the centre of coöperation remains. Dr. Brownlie speaks as a health administrator; he speaks therefore of an organisation in which, theoretically, clinics, dispensaries, auxiliary institutions and outdoor medical services (not to mention housing, public assistance, and other social services) function along with the hospitals in an integrated health service. The problem, therefore, of using the municipal general hospital as "a link of a systematic public health chain" is comparatively easy to solve. But what of the voluntary general hospital? It is, in most areas, an isolated unit. Can it continue in isolation and at the same time meet fully the need not only for comprehensive aids to diagnosis but also for active after-care of patients? Dr. Brownlie does not explicitly raise this issue; but it is the immediately practical one, since the voluntary hospitals still are and will long remain, the main centres of hospital treatment in Great Britain. This conception of the hospital as a link in the chain of preventive and constructive medicine is likely to do more to speed up coördination of voluntary and municipal hospital services than the mere adjustments of numbers of beds and the like have hitherto achieved.

DUKE OF KENT IN GLASGOW

During the visit of the Duke and Duchess of Kent to Glasgow last week, His Royal Highness opened new buildings at the Victoria Infirmary, which included a home to accommodate 145 nurses, and a wing for fee-paying patients. The cost of the buildings has been £80,000, and the total number of beds in the infirmary is now 477. The Duke also laid the foundation-stone of the Royal Infirmary auxiliary hospital and convalescent home at Canniesburn. The new building is to consist of three blocks connected together. The convalescent block will have accommodation for 80 patients, the west block is to be for paying patients and will contain 44 beds, while the central block is to

house the administrative department and the kitchen and dining-room for nurses.

EDINBURGH MUNICIPAL HOSPITALS

A further step in the development of the Edinburgh municipal hospitals is the recommendation of the public health committee to proceed with the reconstruction scheme at the Western General Hospital. This hospital was erected in 1868 as a poor-house, and instead of attempting to reconstruct the existing buildings, it is proposed to build a new surgical unit seven stories in height, with 26 beds on each floor. A medical unit is also to be built, which will contain 182 beds. In addition to these improvements there will be a new X ray department and a new nurses' home. The total cost of the proposed extensions will be £120,000.

POLICE MEDICAL OFFICERS

The Glasgow corporation have been discussing the proposed appointment of two full-time medical officers to be attached to the police force. The Secretary of State for Scotland, after consultation with the Lord Advocate, has given his opinion that the time has now come when the whole of the medical and casualty surgical work in connexion with the police force should be performed by whole-time medical men employed by the police authority. In his view it is of the utmost importance in the interests of the rapid detection and suppression of crime, that police officers and police doctors should work in alliance immediately a crime has been discovered. For this purpose the service of whole-time medical jurists, who would be available at any hour of the day or night, is essential.

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

THE BASIC SCIENCE LAW

Sir Henry Brackenbury knows the medical problems in this country as well as he does those in his own. His distinction between the British and American systems of dealing with cultists as reported in your columns (THE LANCET, April 6th, p. 832) is good evidence of this. Those who have had experience of the American system of regulating the irregular practitioners will surely envy the Englishmen their single standard of qualification. The Basic Science Law, recently enacted in nine States, is the American method of recovering that single standard. The basic sciences as defined in the model Act are: anatomy, physiology, chemistry, bacteriology, and pathology. However, not all of the States that have adopted the law have retained this definition of basic sciences. Connecticut has hygiene and diagnosis in place of bacteriology and chemistry; Nebraska has added hygiene to the original list of five; Washington substituted hygiene for bacteriology; and Wisconsin dropped both chemistry and bacteriology and added diagnosis. The law limits membership of the examining board to members of the faculties of approved universities and colleges. This meets as far as it is possible to do so the inevitable accusation that the medical profession will exert prejudice in the examinations against members of the cults. The Act does not apply to dentists, pharmacists, nurses, optometrists, and chiropodists practising within the limits of their respective callings. B. J. Palmer, the father of chiropractic, has looked with envy on this list of exemptions. "You cannot defeat the ends of science," he has said. "The basic science bills are the buckshot which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractor."

The ultimate success of the basic science laws depends upon education of the public to demand a minimum standard of preparation from all who are licensed to take into their hands the issues of life and death. It will obviously be years before the damage done to public welfare, through letting down the bars to quite uneducated healers with all kinds of fancy names, is repaired. Even now cultists are claiming and often obtaining the right to be employed under the provisions of federal emergency medical relief. But in the end the adoption of the Basic Science Law may recover for us something of the standard of medical practice which Britain enjoys.

PARIS

(FROM OUR OWN CORRESPONDENT)

THE SPENDING OF SICKNESS INSURANCE FUNDS

INSURED workers in France have for some years contributed substantial sums to the organisations which correspond to the English friendly societies, and now the very size of these sums is a source of national embarrassment. There seems inevitably to be an element of demoralisation in the large fortune to which there are many claimants, and a mighty tussle is in prospect over the disposal of the funds in question. Monsieur Queuille, the minister of public health, has recently taken the initiative in drafting a law providing for the coördination of schemes for spending the money on buildings and other works devoted to public health. His draft is now being considered by two other State departments, those of labour and finance, and when agreement has been reached among them, it will be submitted as a Bill to the Chamber of Deputies. There is already a network throughout the country of public health centres concerned with tuberculosis, venereal disease, cancer, and maternity and child welfare, and one of the most important steps to be taken in the near future is to bring these centres into the general public health scheme without overlapping or friction. As in all other countries in which compulsory health insurance has been introduced, the interested parties in France are forming well-defined groups for the defence of their particular interests. First there are the insured workers and the societies and officials representing them. Then there are the general medical practitioners who have hitherto enjoyed much independence, and who now find one function after another being removed from their hands. There is also the young but rapidly growing generation of doctors who see in the beginning of a State medical service openings which are not without attraction. Lastly, there are the highly placed State servants who must coördinate the whole and hold the balance as fairly as possible between the other parties. There is talk of some 975 schemes in the ministry of public health for the spending of insurance funds which have recently been valued at more than 1300 million francs. It is going to be no easy task to convert this stupendous sum into hospitals, sanatoriums, preventoriums, laboratories, dispensaries, and playgrounds for children.

PANEL AND CONTRACT PRACTICE

The New Insurance Bill

ALTHOUGH the new Bill deals mainly with the excusal of arrears for those able to work but unable to obtain employment, there are other provisions some of which are of particular interest to insurance practitioners. Payment of sickness and disablement benefit for any week is to be conditional not only on due notice of incapacity but also on the submission of satisfactory evidence of incapacity within three months, but that period may be extended if reasonable excuse can be adduced.

The Bill provides that institutions maintained out of public funds shall be placed in the same position in relation to health insurance benefits as voluntary hospitals, and accordingly it will be possible for an approved society, at its discretion and with the consent of the person entitled to the benefit, to make payments direct to any hospital in discharge of the patient's obligation while he/she is still an inmate. Another amendment secures that an insured woman who marries after attaining the age of 65 shall not have her right to medical benefit curtailed. Hitherto it has been a curious fact that an insured woman over 65 who married has been treated as a woman who has ceased employment on marriage and thus has been deprived of the medical benefit for life to which she would otherwise have been entitled, although no health insurance contributions would have been payable by or in respect of her in either case.

But the clause which will make the greatest appeal to the profession is that which authorises the making of arrangements to provide medical benefit for life to deposit contributors who are entitled to the benefit on reaching the age of 65. A similar title is already given to members of approved societies, but a deposit contributor ceases to be entitled to medical benefit when his individual credit in the deposit contributors' fund becomes exhausted. The amendment will relieve the mind of many an old man or woman who, too ignorant or too decrepit to secure acceptance by a society, has been faced with the necessity of obtaining treatment in old age under the public assistance arrangements.

A Missed Mastoid?

A recent report by the Medical Service subcommittee to the London Insurance Committee has received unsympathetic attention in the lay press. The facts are these. An insured person had been not well during the Christmas period of 1934 but did not seek medical advice until, as he was suffering acute pain in the head, a written message was sent at 7.15 A.M. on Dec. 27th to the insurance practitioner requesting him to visit, which he did at 10.15 A.M. He examined the patient's chest, looked at one of his ears, diagnosed influenza, and issued a prescription for medicine and ear drops. Next day the practitioner visited and certified incapacity due to influenza. He did not call on Dec. 29th but during that evening the patient's wife visited the surgery and obtained a prescription for a sedative mixture as her husband had been unable to sleep. Some discussion ensued as to the desirability of a further visit, but no visit was paid that day, the practitioner promising to call next morning. The wife was not satisfied with what the practitioner had done, and being worried as to her husband's condition—the pain in the head was now intense—she persuaded her husband to agree to another doctor being called in next morning, a note being sent to the responsible practitioner indicating that the patient was no worse and that it was not desired that he should call that day. The second doctor called and arranged for a nurse to attend to the patient's ear which was discharging, and later in the day after a second visit arranged for the patient's admission to hospital where, on Dec. 31st, he underwent an operation for mastoid, but collapsed and died before the operation was completed. A post-mortem examination was made and the cause of death was certified to be acute middle-ear disease and thrombosis of the lateral sinus, accelerated by ether as anæsthetic for operation (radical excision). The practitioner submitted a letter from the surgeon by whom the operation was performed which stated that death was the result of respiratory failure and not due to the septicæmia or other direct consequence of the disease.

The subcommittee's report indicated several important respects in which the evidence of the practitioner differed from that of the complainant, the widow, notably as to the ear which was examined. While it was clear that the right ear was the seat of the acute trouble, and according to the widow the practitioner very cursorily examined that ear, the practitioner stated that he examined the left ear, finding tenderness but no discharge; his impression was that he mentioned the possibility of mastoid trouble coupled with a remark to the patient that such cases were better treated in hospital; this the widow denied. There was a conflict of testimony as to whether the patient's temperature was taken, as to whether the practitioner offered to call on the evening of Dec. 29th, and as to whether the pain was stated to have become easier.

The subcommittee regarded the practitioner's evidence as unconvincing, while the widow impressed them as intelligent and fair, and they were satisfied that her evidence was honest. They found it difficult to appreciate why the practitioner should have directed his attention to the left ear, when he found no discharge, and they could not think it feasible that both the patient and his wife should have failed to draw his attention to the right ear—the discharge from which had necessitated the changing of the pillow slip twice before 10.15 A.M. They were of the opinion that the practitioner regarded the case as one of influenza and that the really serious part of it escaped him owing in their view to his inadequate examination. After commenting upon the manner in which the practitioner had submitted entries on the medical record form, the committee concluded that the services rendered to the insured person fell short of the standard required and expected of insurance practitioners.

When the report came before the full committee it was criticised by a medical member who was not satisfied that it had been proved that the practitioner failed to make an adequate examination. He thought that in considering the question of an adequate examination of patients it was necessary to a certain extent to consider it in relation to the education received by the practitioner as a student and not in relation to present-day methods—such as the use of light and electrical apparatus—adopted since his qualification. He felt that it was impossible for every practitioner to keep up with the daily developments in medical science and that it was difficult for older practitioners to learn the use of new appliances that were not in existence in their student days.

The chairman of the subcommittee in reply said

that the evidence placed before them indicated that the practitioner had handled the case in a casual and perfunctory manner.

The committee decided, with only three dissentients, to adopt the subcommittee's recommendation that the practitioner should be censured and the Minister of Health recommended to withhold £5 from his remuneration.

PUBLIC HEALTH

Municipal Hospitals in London

VOL. II. of the annual report of the London County Council deals with general matters of public health, main drainage, and housing. The report[1] for 1933 contains concise information on topics many of which are of medical interest. The modernisation of the transferred poor-law services continues to absorb the attention of the Council and a long list of extensions and improvements of hospitals is included in the report. The extent to which specialisation is proceeding is worthy of note. For instance, a central histological laboratory has been provided at Archway Hospital, the Belmont laboratories at Sutton have been extended, a group pathological laboratory has been established at St. Mary Abbots Hospital, and a hospital pathological laboratory at Bethnal Green. X ray units have been improved or added at Archway, Fulham, St. James' and Lambeth Hospitals, the latter becoming the centre for deep X ray and radium therapy, an arrangement involving the closure of the radium unit at the North-Western Hospital. A new out-patient department has been provided at Mile End Hospital and St. Alfege's, and the existing premises at St. Olave's improved and extended. Like other authorities, the L.C.C. found the existing accommodation for nurses in many of the transferred hospitals inadequate, and schemes included in the 1933 programme contained additional bedrooms for nurses in various hospitals totalling 415, with, in some cases, new public and lecture rooms. It seems likely that even this number is short of modern needs. The Ministry's policy of allocating 33⅓ per cent. of fever hospital beds to isolation units is being gradually implemented by the erection of new blocks rather than modification of old, and such units of 60 and 77 beds, respectively, are being provided at the Eastern and Western Hospitals. Naturally, Hammersmith Hospital, the home of the British Postgraduate School, figures largely in the new works, site, building, and engineering costs amounting to £116,177 at this institution. The plastic surgery unit, which has been moved to St. James' Hospital, has taken over the supply and repair of dentures for the other hospitals and institutions.

The types of cases which may be examined and treated at L.C.C. out-patient departments have been defined as follows:—

(1) Casualties, accidents, and other emergencies.

(2) Continuation or after-care treatment of former in-patients requiring further treatment after discharge.

(3) Consultation concerning patients referred by any duly authorised medical officer of the Council.

(4) Antenatal and postnatal examination and treatment.

(5) Patients entitled to outdoor medical relief.

(6) Special examination and/or treatment of cases or classes of cases authorised by the medical officer of health.

The L.C.C. was in active communication with metropolitan borough councils as to slum clearance during the year and reached an estimate of 33,000 houses requiring to be demolished and 58,000 houses and flats to be erected, involving 265,000 persons. Large as these figures appear, they are probably an under-estimate, as the L.C.C. has found it difficult to overcome the inertia of some of the borough councils.

[1] London: P. S. King and Son, Ltd. 1s.

Water-supply of Jersey

A discussion arising out of a question asked by a deputy at a recent meeting of the States of Jersey shows that a careful watch is kept upon the water-supply of that island. It appears from a report in the *Evening Post* that Dr. E. P. Marett, the medical officer of health, has, since last summer, advised in the public press that all drinking water should be boiled, notwithstanding that the expert advisers of the Waterworks Company described it as "of a high degree of bacteriological purity." In a report to his committee Dr. Marett explains that although the water in the main working reservoir is filtered and chlorinated, the St. Peter's stream which feeds it discharges its water very near the outlet, and this stream is polluted.

Dr. Marett points out that the company's experts on one occasion reported presumptive *B. coli* in 50 c.cm. of the water, and he states that he has found on several occasions since August last the group of organisms causing infectious jaundice. Practitioners in the island have informed him that there have been cases of that disease. Dr. Marett's report was approved by the States. The water-supply of a small rocky island with a considerable human population cannot be maintained in a satisfactory state unless the greatest care is taken by all concerned, especially in times of dry weather when there is an influx of visitors. We are aware that the Waterworks Company has in the past sought the best advice on special difficulties, and they are now advised by a well-known firm of experts. It may be hoped that they and the medical officer may coöperate to raise the standard of purity of the water-supply so that the troublesome expedient of boiling may not be necessary during the coming summer.

Immunisation against Diphtheria

Events which are small in relation to the whole field of public health often create lively public interest. Until nine years ago Birmingham could count on having, on the average, more than 100 deaths from diphtheria each year, and even in 1932 and 1933 there were 35 and 33 deaths from this cause. Yet the recent occurrence of three deaths, in close succession to one another, of children attending one school has caused a good deal of public comment. Dr. G. A. Auden, school medical officer, in a press interview, has taken the occasion to point out the facilities which the education and public health committees offer for immunisation, drawing public attention to the fact that 10,000 cases of diphtheria have occurred in non-immunised children under 15 years since 1925, with 580 deaths, whereas only 22 cases have been reported among the immunised, without any deaths. Fortuitous circumstances, such as these recent deaths, often do more to stimulate public interest than scientific argument or persuasive eloquence.

Dr. W. G. Booth, in his annual report for 1934 on the health of Holland (Lincolnshire), remarks on the

low incidence of diphtheria, which he attributes to the success of the immunisation campaign. Toxoid antitoxin floccules are being used so that reactions are avoided, and the preliminary Schick test has been abandoned because experience has shown that, in this agricultural area, 80 per cent. of the children are Schick-positive. This may be all the more reason for doing a late posterior Schick test, at least on a fairly large sample of the immunised, since it has been found that communities less exposed to natural, if latent, immunisation are rather more difficult to immunise artificially. Acceptances are satisfactory. Seven schools were dealt with during the year. In three of them over 90 per cent. of the parents consented, 80 per cent. in another, between 70 and 80 per cent. in two, and 54 per cent. in the remaining one. During the past two years 2000 persons have been immunised. In Holland immunisation appears to be regarded legally as a function of the sanitary authority, Dr. Booth acting for them at their expense. The legal position is a little obscure. Under Section 80 of the Education Act, 1921, a local education authority—i.e., a county council, except in the case of the larger urban areas—may do anything for the health and physical welfare of the school-children to which the Minister of Health consents. The position of maternity and child welfare authorities (which may be county councils or county district councils) is similar under Section 1 of the Maternity and Child Welfare Act, 1918, and the Minister has given a general consent to extensions of schemes such as immunisation at centres would involve. Apart from these provisions, which cover most of the population requiring this form of attention, it would appear that the county district councils (i.e., sanitary authorities) can only undertake immunisation in virtue of Section 133 of the Public Health Act, 1875, which requires an explicit sanction from the Minister of Health.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 25TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2142; diphtheria, 1018; enteric fever, 23; acute pneumonia (primary or influenzal), 945; puerperal fever, 46; puerperal pyrexia, 108; cerebro-spinal fever, 20; acute poliomyelitis, 3; encephalitis lethargica, 10; continued fever, 1 (Rhondda); dysentery, 22; ophthalmia neonatorum, 107. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on May 31st was 3061, which included: Scarlet fever, 943; diphtheria, 1209; measles, 31; whooping-cough, 389; puerperal fever, 27 mothers (plus 12 babies); encephalitis lethargica, 268; poliomyelitis, 3. At St. Margaret's Hospital there were 17 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox, 2 (1) from enteric fever, 22 (0) from measles, 6 (0) from scarlet fever, 22 (1) from whooping-cough, 48 (9) from diphtheria, 49 (11) from diarrhœa and enteritis under two years, and 70 (8) from influenza. The figures in parentheses are those for London itself.

The only death from enteric fever outside London occurred at Edmonton. Five deaths from measles were reported from Birmingham, 4 from Liverpool, and 3 from Walsall. No great town reported more than 2 deaths from whooping-cough. Liverpool had 3 fatal cases of diphtheria, West Ham, Manchester, Preston, Sheffield, Birmingham, and Burton-on-Trent each 2. Of the deaths attributed to influenza 9 occurred at Manchester, 5 at Bradford, and 4 at Leeds.

The number of stillbirths notified during the week was 274 (corresponding to a rate of 38 per 1000 total births), including 43 in London.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Rear-Admiral H. R. H. Denny, C.B., has been appointed Hon. Surgeon to the King, from May 8th, in the vacancy caused by the retirement of Surg. Rear-Admiral W. W. Keir, C.M.G.

Surg. Comdr. J. H. B. Crosbie to *Drake* for R.N.B.

Surg. Lt.-Comdr. C. Keating to *Victory* for R.N.B., and to *St. Angelo* for R.N. Hospl., Malta.

Surg. Lt.-Comdrs. G. Rorison to *Faulknor*, on commg., and J. M. Sloane to *Victory* for R.N.B.

Surg. Lts. (Short Service) S. K. Foster, J. W. Oliver, H. de B. Kempthorne, F. M. Duthie, and T. McCarthy, transferred to permanent list, with original seny.

Surg. Lt. F. M. Duthie to *Victory* for R.N.B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. J. E. L. Morris and Proby. Surg. Lt. J. L. Dunlop to *Tiverton*.

Proby. Surg. Lt. (D.) J. W. W. James, L.D.S.U., to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Short Serv. Commissions.—G. S. Musgrove to be Lt. (on prob.), Lt. (on. prob.) G. C. Dansey-Browning is secd. under the provisions of Art. 213, Royal Warrant for Pay and Promotion, 1931.

Temp. Commissions.—Maj. F. C. Doble relinquishes his commn., and retains the rank of Maj.

REGULAR ARMY RESERVE OF OFFICERS

The undermentioned having attained the age limit of liability to recall, cease to belong to the Res. of Off.:—Col. W. R. P. Goodwin, D.S.O. (late R.A.M.C.), Maj. G. H. Rees.

TERRITORIAL ARMY

Capt. G. T. Symons to be Maj.

TERRITORIAL ARMY RESERVE OF OFFICERS

Lt.-Col. W. D. Sturrock, D.S.O., having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform.

ROYAL AIR FORCE

The undermentioned are granted short service commissions as Flying Officers on probation for three years on the active list, with effect from May 7th, 1935:—R. C. H. Tripp, P. A. Cooper, L. E. A. Dearberg, H. L. Willcox, and A. R. C. Young.

Flight Lt. P. D. Barling is promoted to the rank of Squadron Leader.

Wing Comdr. A. J. Brown, D.S.O., is placed on the retired list.

Dental Branch.—Flying Offr. R. H. Marthews, L.D.S., is promoted to the rank of Flight Lt.

Flying Offr. A. W. Smith to R.A.F. General Hospital, Hinaidi, Iraq.

INDIAN MEDICAL SERVICE

Lt.-Col. W. J. Simpson retires.

Capt. S. S. Ahluwalia resigns his temp. commn.

Indian Medical Department.—The undermentioned retire: Maj. (Sen. Asst. Surg.) F. W. Holmes and Maj. (Sen. Asst. Surg.) R. H. G. Thompson.

The list of earthquake casualties reported from Quetta includes the names of Lt.-Col. B. C. Ashton, I.M.S., and Major J. G. Bird, I.M.S., amongst the injured.

BRIGHTON AND HOVE DENTAL HOSPITAL.—Owing to continued lack of support the work at this hospital has had to be curtailed. The move to the present building in Buckingham-road, Brighton, from the inadequate accommodation in Queen's-road, has been fully justified; but the mortgage remains an anxiety and a burden. Until it is paid off it will be impossible to buy an X ray apparatus. It was stated at the annual meeting of the governors that the income from subscriptions last year was only £37. A special appeal is to be made in the autumn. The institution was established in 1887 and will observe its jubilee in two years' time.

CORRESPONDENCE

LONDON HOUSE

To the Editor of THE LANCET

SIR,—We are anxious to direct the attention of the medical profession to a letter, signed by General Smuts, Mr. Bruce, Sir Robert Borden, Sir James Parr, and Lord Lugard, and a leading article in the *Times* of May 27th.

In this letter an appeal is made to the public to support financially a scheme for the completion and endowment of London House, an institution which has already proved invaluable to a large number of post-graduate medical students from overseas and which is destined to play a very important part in the educational life of the Empire.

London House, situated in Mecklenburgh-square and opened in 1931, owes its origin largely to the enthusiasm and hard work of the late Mr. Frederick C. Good-enough, whose ambition it was to establish a home for students from all parts of the Empire with amenities and facilities for the completion of their education similar to those afforded by the colleges of our more ancient universities.

The Carnegie Corporation, already generous donors, have promised a further sum of £20,000, provided that £30,000 can be raised from other sources, and it is calculated that the total of at least £50,000 will be necessary for further building and endowment purposes.

This year is remarkable for efforts to make London a worthy centre of Imperial Medicine, and to bring members of our profession all over the world into closer relationship. The opening of the Postgraduate School at Hammersmith by Their Majesties the King and Queen is to be followed by a meeting of the British Medical Association in Melbourne, which means that several hundred practitioners will be traversing and visiting several of the Dominions. We are afforded, therefore, the opportunity for making the advantages and needs of London House well known all over the Empire and for stimulating the profession and its friends, overseas as well as at home, to unite in giving a great project all the support and encouragement it deserves.

Contributions may be sent to the Hon. Treasurer of London House, 54, Lombard-street, London, E.C. 3.

We are, Sir, yours faithfully,

DAWSON OF PENN, FREDERICK MENZIES,
HOLBURT WARING, W. LANGDON-BROWN,
MOYNIHAN, E. FARQUHAR BUZZARD.
HORDER,

May 31st.

LEAGUE OF NATIONS REPORT ON THE TREATMENT OF SYPHILIS

To the Editor of THE LANCET

SIR,—Since the publication of the *Quarterly Bulletin* for March, 1935, of the Health Organisation of the League of Nations, which contains the report of an expert committee summarised in your issue of May 18th (p. 1170), I have repeatedly been asked why it is that among the 29 British clinics which submitted their records the name of no Manchester or Salford treatment centre appears. For Manchester I cannot speak; but so far as Salford is concerned the reason is that no invitation was issued to it.

This explanation seems to be necessary in view of the statement made in the report that "In each of these countries the dermatological and venereal disease clinics were appealed to for their support, and a large majority readily responded." It might be thought, on looking at the table of British clinics, that the Salford municipal clinic—one of the largest in the country—refused to take part in the investigation. I want to make it perfectly clear that not only was this clinic not asked to submit its records, but it did not receive any official intimation that such an inquiry was in progress.

The omission of the Salford municipal clinic is the more remarkable because it and one other are the only treatment centres in Great Britain where the alternating and continuous method of therapy is in operation. I am, Sir, yours faithfully,

Municipal Clinic, Salford, May 30th. E. T. BURKE.

STIMULANTS OF METABOLISM

To the Editor of THE LANCET

SIR,—We fear that Dr. Newcomb has misinterpreted our letter in THE LANCET of May 25th. Sir William Willcox conveyed the impression that given in recognised therapeutic doses nitrophenols cause damage to liver and kidney. We emphasised that in therapeutic doses it was impossible to obtain any evidence of damage to liver or kidney. Dr. Newcomb, however, was referring to a case in which there was a gross overdosage. We feel that it is only fair to stress the difference between his observations and our own results obtained from a study of persons and animals to whom normal doses of the substance were administered. We wish to make it clear that we were concerned solely with the alleged toxicity of these compounds and made no reference to the relative merits of various methods of treatment for obesity. The question of the state of mind of one of us (E. C. D.) on this point does not therefore arise.

We are, Sir, yours faithfully,

E. C. DODDS,
J. D. ROBERTSON.

Courtauld Institute of Biochemistry, Middlesex Hospital, June 3rd.

ADMINISTRATION OF CARBON TETRACHLORIDE FOR HOOKWORM

To the Editor of THE LANCET

SIR,—In your last issue Dr. A. S. Tuxford suggests that to give carbon tetrachloride shaken up in castor oil makes for safety. G. Giglioli felt that the same result was produced by shaking it up in water (Trans. Roy. Soc. Trop. Med. and Hyg., 1924, xviii., 111). Both opinions are formed on uncontrolled experiments of insufficient extent, and accordingly have no stable foundation. As to efficacy both series of observations were made by treating men in herd fashion, it being unknown whether, at the time of treatment, they were even infected; accordingly the efficacy of the treatment used by Dr. Tuxford is unknown. As to animal experiment, the only evidence in any way apposite which I have traced is by Maurice C. Hall (Jour. Agric. Research, 1921, xxi., 157), who recovered no hookworms after treating a dog with 0·3 c.cm. of carbon tetrachloride per kg. body-weight, followed immediately by castor oil; the sufficiently meagre evidence is against the anthelmintic value of the suggested method of administration, but this can never be determined by herd treatment. I am dealing more widely with the general subject in a paper which will be published shortly. I am, Sir, yours faithfully,

Ealing, May 31st. CLAYTON LANE.

TREATMENT OF SCABIES

To the Editor of THE LANCET

SIR,—Dr. Ingram's defence of the use of sulphur in scabies may have some weight in civilian practice, though even here, if more rapid methods prove practicable, the approved societies will consider that the presence of a mite in the skin does not create a sickness disability. Among private patients too there will be some for whom the time factor is very important. The problem however is much more serious in the Army, where one indication of military efficiency is the absence of preventable disease. It is to the Army we naturally look for any advance in disinfestation, as it can command the services of experts in the effects of gases and vapours. To discover the most suitable pesticide for the acarus does not appear a difficult task, at least in theory. The common spider ought, in default of the mite, to make a good corpus vile on which to test the lethal agent. As a dilute sulphur ointment kills (or is it only a repellent?) the parasite, we may conclude that a chemical rapidly fatal to the intruder but innocuous to the host can be found. The crux appears to be the eggs and female in the burrows. Local reduction of the air pressure by rupturing these, as in the treatment of books in a closed chamber, might solve this difficulty, should such arise. A more scientific outlook on scabies would develop if the word were dropped from the Nomenclature of Diseases and classified under such a term as dermatitis infestata. The use of ointments for prolonged periods in skin parasites has had a long day, and the time has come when experience gained in the treatment of infestations outside the human race should receive a fair trial.

I am, Sir, yours faithfully,

Knock, Belfast, June 3rd. R. M. FRASER.

THE INDIAN EARTHQUAKE

To the Editor of THE LANCET

SIR,—The earthquake in Baluchistan is a disaster of the first magnitude. It is inevitable that with a death-roll running into tens of thousands large numbers of children have been injured and orphaned and thrown into want and misery. On behalf of the Save the Children Fund, which during 16 years has disbursed over £2,500,000 for the rescue of children at home and abroad in times of distress and disaster, I am appealing for help for these children. Donations received by the hon. treasurer, Mr. H. D. Watson, C.I.E., C.B.E., at 40, Gordon-square, London, W.C.1, can be used for their immediate relief.

I am, Sir, yours faithfully,

NOEL-BUXTON.

June 4th, 1935. President, the Save the Children Fund.

DISTRESS AND HEALTH.—An annotation of this title in our issue of May 4th drew a letter of protest from Dr. John Marrack (vide THE LANCET, May 18th, p. 1189). His criticism was to the effect that in our note upon economic circumstances in relation to the health of the community in Sunderland and certain districts of Durham (H.M. Stationery Office. 1935. Cmd. 4886. Pp. 52. 9*d*.) we had not done justice to the White Paper. In a further communication Dr. Marrack says that the quotation of figures in his previous communication was not correct, but holds that as a correction of the figures would strengthen his arguments his criticism stands good. This is a position which must remain, as Government Departments are unable to enter into public discussions.

THE BIRTHDAY HONOURS

THE list of honours conferred by the King on his 70th birthday contains the following names of members of the medical and dental professions :—

Baronet

Sir Henry Jackson, M.B., M.P.
For services in connexion with transport.

Order of Merit

Sir F. Gowland Hopkins, F.R.C.P., P.R.S.
Professor of biochemistry in the University of Cambridge.

G.C.V.O.

Sir E. Cooper Perry, F.R.C.P.
Consulting physician to Guy's Hospital.

G.B.E.

Sir George Newman, K.C.B., F.R.C.P.
Lately chief medical officer, Ministry of Health and Board of Education.

K.C.B.

Lieut.-General James Andrew Hartigan, C.B., C.M.G., D.S.O., M.B.
Director-general of Army Medical Services.

K.C.V.O.

Lancelot Edward Barrington-Ward, F.R.C.S.
Surgeon to the Hospital for Sick Children, Great Ormond-street, and the Royal Northern Hospital.

A. James Walton, F.R.C.S.
Surgeon to H.M. Household; surgeon to the London Hospital.

K.B.E.

Air Vice-Marshal John McIntyre, C.B., M.C., M.B.
Late director of medical services, Royal Air Force.

D.B.E.

Mrs. Annie Jean Connor, M.D.
For work on maternal and child welfare in Australia.

Miss Constance Elizabeth D'Arcy, M.B.
For work on maternal and child welfare in Australia.

Knights Bachelor

Arthur John Hall, F.R.C.P.
Emeritus professor of medicine in the University of Sheffield.

Walter Burford Johnson, C.M.G., F.R.C.S.
Director of medical and sanitary services, Nigeria.

Patrick Playfair Laidlaw, F.R.C.P., F.R.S.
Pathologist on the staff of the Medical Research Council.

Harry Cuthbertson Moxham, D.D.S.
Federal president of the Dental Association, Commonwealth of Australia.

John Vigers Worthington, M.R.C.S., M.P.
Parliamentary private secretary to the Prime Minister.

C.B. (Military)

Major-General R. B. Ainsworth, D.S.O., O.B.E., M.R.C.S.
Commandant and director of studies, Royal Army Medical College.

Major-General C. W. F. Melville, F.R.C.S.E., I.M.S.
Deputy director of medical services, Eastern Command, India.

Major-General T. G. F. Paterson, D.S.O., M.B., I.M.S.
Deputy director of medical services, Northern Command, India.

Major-General J. W. West, C.M.G., C.B.E., M.Ch.
Professor of military surgery, Royal Army Medical College.

C.B. (Civil)

Lionel Danvers Bailey, M.C., M.R.C.S., K.H.P.
Colonel, Army Medical Services, T.A.; Superintendent of the physiotherapy department, St. George's Hospital.

Surgeon Rear-Admiral J. S. Dudding, O.B.E., M.R.C.S.
Formerly director of medical studies, Royal Naval Medical College.

C.M.G.

David Duff, M.D.
Director of medical services, Gold Coast.

C.I.E.

Lieut.-Colonel Bernard Higham, M.B., I.M.S.
Chemical analyst to the Government of Bombay.

Lieut.-Colonel Robert Knowles, M.R.C.S., I.M.S.
Professor of protozoology and secretary of the Calcutta School of Tropical Medicine; late editor of the *Indian Medical Gazette*.

C.V.O.

Charles Gordon Moore, M.B.
Physician in ordinary to Princess Beatrice.

C.B.E. (Military)

Colonel Wallace Benson, D.S.O., M.B.
Assistant director of medical services, London.

C.B.E. (Civil)

Miss Elizabeth Bolton, M.D.
Senior surgeon to the Elizabeth Garrett Anderson Hospital; dean of the London School of Medicine for Women.

The Hon. A. E. Colvin, M.C., M.B.
Chairman of the New South Wales Hospital Commission.

Cecil Evelyn Cook, M.D.
Chief Protector of aborigines, Northern Territory, Australia.

Hamilton William Dyke, M.B.
Principal medical officer, Bechuanaland.

George Marshall Findlay, O.B.E., M.D., Sc.D.
Member of scientific staff, Wellcome Research Institution, London.

Laurence Edward Keegan, M.D.
Superintendent, General Hospital, Newfoundland.

Robert Edward McKechnie, M.D.
Chancellor of the University of British Columbia.

Charles Johnston Smith, O.B.E., F.R.C.S.E.
Senior surgeon, General Hospital, Singapore.

Michael Herbert Watt, M.D.
Director-general of health, New Zealand.

Miss Millicent Vere Webb, F.C.O.G.
Chief medical officer, Women's Medical Service for India.

O.B.E. (Military)

Major A. J. Beveridge, M.C., M.B., R.A.M.C.
Late medical officer, anti-gas wing, Small Arms School, Winterbourne Gunner.

Major A. G. Harsant, F.R.C.S., R.A.M.C.
Surgical specialist, Egypt.

Wing-Commander T. C. Morton, M.R.C.P., R.A.F.

Surgeon Captain C. F. O. Sankey, M.B.

O.B.E. (Civil)

James Frederick Corson, M.B.E., M.D.
Medical officer, Tanganyika Territory.

George Hugh Culverwell, M.D.
Medical inspector of reformatory and industrial schools, Home Office.

Allan Roy Dafoe, M.D.
For public services as a practising physician in Canada.

Major F. A. Gunasekera, M.R.C.S.
Second-in-command, Ceylon, Medical Corps.

Henry Saumarez Hensman, M.R.C.S.
Superintendent, Government Mental Hospital, Madras.

Miss Helen Mary Mayo, M.B.
For work on maternal and child welfare in South Australia.

Frederick Victor Nanka-Bruce, M.B.
For public services in the Gold Coast.

Dadabhoy Dinshaw Variava, F.R.C.S.E.
Civil surgeon, Aden.

M.B.E.

George Ferguson, M.D.
For work on tuberculosis in Canada.

Mrs. Doris Clifton Gordon, M.B.
For work on maternal and child welfare in New Zealand.

Khong Kam Tak, M.B.
Medical Superintendent, Hospital of Perak Chinese Maternity Association, Ipoh, F.M.S.

Mrs. Helena Muriel Pudney, M.B.
For work on child welfare in Nigeria.

Lieut. John Auty Rogers, M.R.C.S.
Assistant to the Surgeon to the Viceroy of India.

Miss Wenefride Thompson, M.R.C.S.
of St. Luke's Hospital, Chabria, Assam.

Kaisar-i-Hind Medal

Miss Emily Gertrude Stuart, M.B.
of Church of England Zenana Mission Society Hospital, Quetta, Baluchistan.

FORTHCOMING CONGRESSES

MEETINGS which have been arranged for the second half of this year include the following :—

June 27th–29th	National Association for the Prevention of Tuberculosis	Southport.
June 27th–July 3rd	International Congress for Military Medicine and Pharmacy	Brussels.
June 29th–July 3rd	Journées Médicales de Bruxelles	Brussels.
June 30th–July 3rd	International Congress on Physical Education	Brussels.
July 1st–3rd	Maternity and Child Welfare Conference	London
July 3rd–5th	Royal Medico-Psychological Association	London.
July 3rd–6th	Oxford Ophthalmological Congress	Oxford.
July 13th–14th	British Association of Radiologists	Birmingham.
July 15th–20th	Royal Sanitary Institute	Bournemouth.
July 20th–21st	European Mental Hygiene Reunion	Brussels.
July 22nd–27th	International Congress on Accidents and Industrial Diseases	Brussels.
July 23rd–27th	International Congress on Life Assurance Medicine	London.
July 27th–30th	International Thalassotherapy Congress	San Sebastian.
July 29th–Aug. 2nd	International Neurological Congress	London.
Aug. 8th–11th	Gastro-Enterology Congress	Brussels.
Aug. 9th–17th	International Physiological Congress	Leningrad & Moscow.
Aug. 25th–30th	All-Russia Congress of Physiotherapy	Odessa.
Sept. 4th	British Association	Norwich.
Sept. 13th–22nd	Dermatological Congress	Budapest.
Sept. 11th–13th	British Medical Association	Melbourne.
Sept. 12th–19th	Tomarkin Foundation Post-Graduate Course	Brussels
Sept. 23rd–29th	International Congress of the History of Medicine	Madrid.
Oct. 12th–17th	International Society of Medical Hydrology	Brussels.
Dec. 30th–Jan. 4th	International Society of Surgery	Cairo.

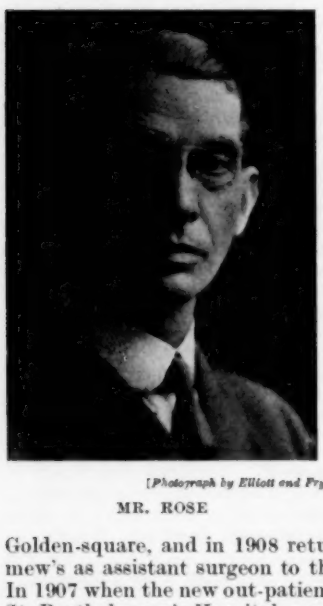
OBITUARY

FRANK ATCHERLEY ROSE, M.B., B.Chir. Camb., F.R.C.S. Eng.

LATE SURGEON TO THE THROAT AND NOSE DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL

WE regret to record the death which occurred on Thursday, May 30th, of Mr. Frank Rose, the well-known laryngologist attached to St. Bartholomew's Hospital and to the Hospital for Diseases of the Throat, Golden-square, London.

Frank Atcherley Rose was born in 1873, the son of Mr. E. P. Rose, and was educated at Bedford Modern School, whence he went to St. John's College, Cambridge, with a science scholarship. He graduated at Cambridge in 1895 with a first class in the Natural Sciences Tripos and proceeded for his medical training to St. Bartholomew's Hospital, where he gained the Shuter scholarship. In 1902 he took the degrees of M.B., B.Chir. Camb., and in the following year the F.R.C.S. Eng. After holding the posts of house surgeon to Mr. Butlin at St. Bart's. Hospital and assistant demonstrator of pathology under Frederic Andrewes, he became resident medical officer at the Metropolitan Hospital. He now turned to laryngology as a specialist and was appointed surgeon to out-patients at the throat and ear department of the Great Northern Central Hospital. He was also appointed to the Throat Hospital in Golden-square, and in 1908 returned to St. Bartholomew's as assistant surgeon to the throat department. In 1907 when the new out-patient block was opened at St. Bartholomew's Hospital, a special department was allocated for throat and nose diseases, including new out-patient rooms and a special ward for the in-patients. The arrangement and charge of this new department was entrusted to Mr. Douglas Harmer and Mr. Rose, who acted as colleagues until 1928, when Rose became head of the department until his retirement in 1930. He served during the war with the rank of Captain, R.A.M.C. (T.).



[Photograph by Elliott and Fry

MR. ROSE

Mr. Joseph Cunning writes: "I first met Frank Rose when he was Butlin's house surgeon and I was working for the Final Fellowship. That the great man showed considerable respect for Rose's opinion was what first attracted my attention, and this respect lasted the whole of Butlin's life, for it was to Rose he came for treatment in his last illness. Later, when I was senior R.M.O. at the Royal Free Hospital, Rose and I found ourselves dining at Reggiori's restaurant at King's Cross on Sunday evenings, and ever since we remained firm friends; he was at that time demonstrator of pathology under Andrewes at St. Bartholomew's Hospital. When he decided to embark on surgery he realised that advice given him at Cambridge, viz., that the First Fellowship examination was not worth bothering about, was wrong. And, while still doing whole-time work in the pathological department, he passed that examination in some absurd minimum time. When about to enter for the Final Fellowship he thought he ought to be coached, as he had little time for reading. I sent him to T. P. Legg, who was then assistant surgeon to the Royal Free Hospital, and when I next met Legg he said 'What have you sent Rose to me for? He knows as much surgery as I do.' Rose was one of those fortunate people who do not have to laboriously read and read and hope to remember; any subject he took up he mastered and it was fixed in his brain for ever. He began the study of diseases of the throat and was appointed to the staff of the Golden-square.

"This appointment was followed by the assistant surgeoncy to the throat department of St. Bartholomew's, and slowly but steadily he made his mark as a laryngologist. Accurate thinking (and he could not tolerate anything other), an extremely logical mind, and a high degree of operative skill, made him one of the leaders in his branch of surgery. His opinion was highly valued by many other throat surgeons when they wanted a consultation on their own cases—the best tribute one doctor can pay another. He was a hard-working secretary and afterwards president of the laryngological section R.S.M. He retired from St. Bartholomew's before his time was up and discontinued private practice in June, 1931, so that he might travel around the world.

"Rose rowed in his college boat at Cambridge, at that time was a good tennis player, and later, when he took up golf played very reliably with a 6 handicap. He was equally good at billiards and chess. He married in 1913 my wife's cousin, Marian Darling Harris, daughter of Dr. A. C. E. Harris of Birkenhead. An ideally happy union was tragically terminated by the 1918 influenza epidemic, leaving Rose with a young son and daughter, to whose bringing up he ever afterwards devoted himself. When he made a friend that friend was his for life, and could rely upon him for absolute loyalty, sympathy, and help in any trouble. Although he never sought popularity, he has left a large number of friends and patients who admired his character to mourn their loss. We were all gainers from our friendship with Rose."

Mr. Douglas Harmer adds: "Undoubtedly Rose was a remarkable personality. His characteristics were great reserve coupled with kindliness and generosity. Having decided to specialise in laryngology he devoted the greater part of his life to the study of the views of others and rarely gave expression to his own. As a lecturer he possessed a quiet humour and attracted good attendances. His extreme caution prevented him from becoming an easy writer. By all his colleagues and students he was regarded as a good and careful operator but never as very venturesome. One of his colleagues once remarked 'even such a careful surgeon as old Rosie is not always right.' And thus it came about that he never acquired as great a reputation as he deserved in any circles outside those of his own acquaintances. By these he was regarded as a man who was not only a good specialist but also a surgeon of wide knowledge; above all, one who was transparently honest and not afraid to express his opinion forcibly after mature consideration. He was a slow worker, and both at hospital and in his private practice disliked seeing too many patients, preferring to have more time for a few. Those that he was interested in invariably

became very attached to him and trusted his advice implicitly. Apart from his profession he had few hobbies. He was interested in reading and would have made a shrewd financier. Games as a whole did not attract him specially.

"A small group of relations and friends assembled at Golders Green on June 3rd to pay tribute to the memory of a fine courteous gentleman who was respected in his profession and was loved by the few who were fortunate enough to know him personally."

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Housing (Overcrowding) Bill

IN the House of Commons on May 29th the Housing Bill as amended in standing committee and on recommittal was further considered on report. Sir P. HARRIS moved an amendment to vary the first schedule so as to give a more generous definition of overcrowding. For the first time, he said, they were attempting by Act of Parliament to get a universal overcrowding standard applicable to the whole country. After three years efforts to work out a solution of this great problem it was unfortunate that in an Act of Parliament they were going to fix such a low standard. What he was trying to do was to exclude the living room in any ordinary dwelling for sleeping purposes and that in counting the accommodation they should disregard one room in the house, the living room. To put beds in the living room, in the kitchen, was bad and a recognition of a very low standard which Parliament ought not to countenance.—Sir HILTON YOUNG said that the standard inserted in the Bill, after the most prolonged and careful inquiry, was held to be the practical standard which was capable of being realised by progressive action now according to the methods designed by the Bill. It was a standard which it was possible to achieve as a penal standard. He hoped that when they had gone forward with the great work of providing additional accommodation, as the standards were raised, at a future date some successor of his would be able to announce that the time had come for the enactment of a general increase in the penal standard of accommodation.

The amendment was negatived and the Bill read the third time.

Paying Patients in Voluntary Hospitals

In the House of Lords on May 30th, when the Voluntary Hospitals (Paying Patients) Bill was considered on report, Lord LUKE proposed four amendments the effect of which was to make clause 4 para. (*b*) read as follows:

"On an application for authority to use existing buildings or parts of existing buildings, unless they are satisfied either (i) that the use of the buildings or part thereof for the purposes for which the trusts were created or the prohibition or restriction was imposed is impracticable, or is likely soon so to become, because the committee of management have not at their disposal, and will be unable to obtain, sufficient funds to enable the buildings or that part thereof to be, or to continue to be, so used; (ii) that the use of the buildings or part thereof for the purposes aforesaid is impracticable, or is likely soon so to become because of a shortage of demand for accommodation on the part of the persons for whose benefit the trusts were created or the prohibition or restriction was imposed; or (iii) that the committee of management have, or are likely soon to have, at their disposal premises which could be put to the use to which the application relates without breach of any trust upon which those premises are held or contravention of any such prohibition or restriction as aforesaid and that the buildings or part thereof will be used by way of exchange for those premises."

When the Bill was in committee the only point, he said, on which agreement had not previously been reached was that of the use of existing buildings. On that point Lord Hailsham had laid down the principle that even if a hospital under the new powers given by the Bill had collected money which could be used to provide pay-beds and could with that money alter the existing buildings so as to render additional space available that additional space must be used for the patients for whom the buildings were erected under the original trusts—namely, the sick poor—unless that was impracticable for the reasons given in the clause which amounted to failure of the original trust on lack of funds or lack of demand. Lord Gage had already indicated however that the Government would be prepared to consider the contingency where the hospital had buildings the trusts attaching to which did not allow the taking of paying patients and also had other buildings and desired to make an exchange. His amendment, said Lord Luke, merely gave effect to that. There would be no reduction in facilities for ordinary patients because if any part of the existing building would be used for paying patients an equivalent amount of accommodation would be provided elsewhere for the benefit of the ordinary patients. Cases might well occur where such an exchange was the best way of planning an expansion of a hospital.

One example was where new and improved nurses' quarters could be built out of money available for pay-beds and some of the old rooms which had been occupied by nurses could be converted into single wards for pay-bed patients. It would be obviously better in such a case to do this rather than to leave some of the nurses in the existing building and put the pay-beds in the new nurses' block. He would like to suggest that such schemes at hospitals which already had power to provide pay-beds usually produced material advantages for the ordinary patients. Improved accommodation for nurses benefited them directly. The additional beds reduced the proportionate overhead cost per head, thus increasing the capacity of the hospital to provide for the sick poor.

The pay-beds provided accommodation for the new poor—the black-coated poor—and possibly a smaller number of those who could afford to pay a price that would leave the hospital a profit. In each case this was a benefit to the hospital and the sick poor for whom it was founded. The whole rearrangement would be satisfactory to each party concerned—the sick poor, the paying patients, and the nurses—with disadvantages to none of them. The point of the amendment was merely to permit exchanges which would provide outside the existing buildings equivalent accommodation for the original patients and thus to give facilities for efficient planning.

The amendments were agreed to.

In the House of Commons on Monday, June 3rd, the West Riding of Yorkshire Mental Hospitals Board (Superannuation) Bill was read a second time.

Safety on the Roads

In the House of Commons on June 3rd, in committee of supply, Mr. HORE-BELISHA said that a driving test for the drivers of ordinary motor-cars became compulsory as from June 1st in the case of all applicants for licences on and after that date who had not held a licence before April 1st, 1934. During the last three months a voluntary system had been in operation, since when 35,000 persons had taken the test and nearly one in every ten had failed—an illustration of the needless risks which were taken previously in permitting anyone to drive a powerful machine on a payment of 5*s*. While they were taking steps to ensure reasonable efficiency in driving they had not yet found a means of subjecting private vehicles for brake and tyre defects to regular inspection. That was for the future. In addition to securing a proper standard of driving it was necessary to provide for a

more orderly and methodical use of the roads. The new Highway Code, which Parliament had just approved, if studied and observed, would create a sound road practice. As regarded particular measures, undoubtedly the provision of pedestrian crossings have been responsible for the saving of life and limb. The Ministry managed to get about 10,000 put down in London in three months. He was now making a similar effort in regard to the provinces. It was noteworthy that in London, where the safety measures had been chiefly concentrated, there had been a far greater reduction in accidents than in the country as a whole. There had been a reduction in London in the number of killed of 31 per cent., and of injured 16 per cent. in the last eleven weeks of this year as compared with the same period last year. The reductions for the country as a whole in the last eleven weeks had been 16 per cent. in killed and 11½ per cent. in injured, as compared with the same period last year. The speed limit which came into operation on March 18th had served the purpose of making the flow of traffic more agreeable and smooth. The number of casualties, which had fallen in the City, Metropolitan, and borough police areas by 14½ per cent. as compared with 8 per cent. in country police areas, was a rough indication of its success. In the light of experience he was hoping to de-restrict numbers of roads where the speed limit had been unnecessarily applied.

A most distressing feature of the accident returns was the number of children involved. Of the 3517 pedestrians killed on the roads in 1933 no fewer than 1171, or one-third, were children under the age of 15 years. Two inter-departmental committees had been appointed for England and Scotland to draw up a curriculum for teaching road safety in schools. Undoubtedly, many accidents occurred owing to the lack of playing grounds for children. He had decided on the immediate closing of certain streets in London to motor traffic, except when it was proceeding to premises in those streets. (Cheers.) Notice of a regulation would be given this week converting, as an experiment, certain streets in Southwark and Paddington into children's play streets. It was intended to erect notices at the ends of the streets, and to paint the kerbs with green paint. The system had been tried at Salford and Manchester with success. The intensity of the campaign for road safety, which was the most human part of his task, had coincided with and not in any way checked the rapid extension of the use of the roads by mechanical transport. At the end of February there were 224,000 more vehicles licensed than at the corresponding date in 1934, and 441,000 more than at the same period of 1931. The rate at which new vehicles were coming on the roads exceeded all previous records, and already during the first four months of this year 151,268 new vehicles had been registered. They must do everything that they could to provide for this great expansion, and to see to it that the motor vehicle, like every road-using interest, had all the facilities it could reasonably require from the points of view of both convenience and safety. With this intention in view, the Government decided on a five-year plan for the roads. Highway authorities had been invited to send in their proposals on this basis, and there was every indication that the scope of the plan would be in excess of anything that had been yet achieved in a similar period of time. Considerable progress had been made in the provision of non-skid surfaces, and much experimental work in various parts of the country was being conducted by the Ministry's experimental committee in conjunction with the Road Research Board. The Ministry hoped within five years to eliminate all those weak bridges in the possession of railway and other statutory owners which most seriously affected the free flow of traffic. London experience indicated that the tramcar taken in conjunction with its track had a higher accident ratio than the trolley vehicle, and was a greater hindrance to the free flow of traffic. The number of accidents involving personal injury per 100,000 car miles run was slightly over 6 per cent. in the case of trolley vehicles, and was more than 9 per cent. in the case of tramcars. The London Transport Board had already formulated plans for the substitution of more than 40 per cent. of their tramways by trolley vehicles.

Ribbon Development Bill

After further consideration in the House of Lords on May 29th and 30th, the committee stage of this Bill was concluded without further amendment.

HOUSE OF COMMONS

WEDNESDAY, MAY 29TH

Accidents to Boys Underground

Mr. TOM SMITH asked the Secretary for Mines the number of boys under 16 years of age killed and seriously injured underground during each of the last five years.—Mr. ERNEST BROWN replied: In 1930, 24 boys under 16 years of age were killed and 171 seriously injured below ground at mines under the Coal Mines Act. The corresponding figures for 1931 were 25 and 142; for 1932, 17 and 112; for 1933, 15 and 101; and for 1934, 15 and 122.

Mr. WEST: Does not the Minister think that it is deplorable that children of 14 should be so employed when so many adults are unemployed to-day?

Viscountess ASTOR: Will the National Government try to see whether there is a way of stopping the employment of children under 16 in mines?

Supply of Milk to Hospitals

Mr. LEONARD asked the Secretary of State for Scotland if he would expedite a decision on the part of the committee investigating the milk charges demanded from public institutions.—Sir GODFREY COLLINS replied: I have considered the report, and am grateful to the committee for the care with which they have sifted the evidence and arguments placed before them. It appears to me, however, that any proposal requiring a Marketing Board to give special terms to selected classes of consumers raises wide issues of policy, and cannot well be considered merely as a matter of amendment of an existing marketing scheme. The Committee's views will be carefully examined in connexion with the formulation of a policy for the milk industry following upon the temporary measures brought into operation under the Milk Act, 1934. In the meantime it is not practicable to require the Scottish Milk Marketing Board to give effect to the committee's suggestions.

Mr. LEONARD: Is the right hon. gentleman aware that the hospitals in Scotland last year did not know what charges were being made for milk, and that they are now entering into the second year's contracts in total ignorance of what they have to pay, and is the right hon. gentleman also aware that this may possibly react on the use of grade A, tuberculin tested, milk which may be eliminated as a precautionary measure by some hospitals?

Sir G. COLLINS: I hope that the latter suggestion will not develop. The matter raises large issues of policy, and it has been referred to the Milk Reorganisation Committee, who are at present investigating this and other matters.

Mr. LEONARD: Is the right hon. gentleman aware that the report to which he has referred, and which I presume is in his possession, stated that in so far as these institutions are not receiving special treatment it may be said that the action of the Board is not in the public interest? Is the right hon. gentleman going to countenance something that is not in the public interest? If a reduction in charges is made, can he ensure that the reduction will be retrospective?

Sir G. COLLINS: Preference cannot be given to one institution alone. The Consumers' Committee undoubtedly recommended that that step should be taken, but unfortunately or fortunately, the Milk Marketing Board have no power to single out certain classes of institutions for preferential treatment at the moment.

Mr. PALING: Is it not just as necessary to supply cheap milk to public institutions as to ice-cream vendors?

Sir G. COLLINS: The hon. Member must know that the Government have found large sums of money for supplying cheap milk for children in schools.

Post Office Employee's Death from Anthrax

Mr. THORNE asked the Postmaster-General if he had any information to give to the House in connexion with the death of a Post Office employee from anthrax; whether the cause of death was attributable to his employment; what compensation would be paid to his dependants; and if he had any record of similar cases in his department.—Sir E. BENNETT, Assistant Postmaster-General, replied: I much regret to say that a sorter was taken ill and died while on holiday. At the inquest the coroner found that death was due to anthrax, but that there was no evidence as to how the deceased had become infected. The deceased's duties did not bring him into contact with any likely source of anthrax, and there would seem no good reason to attribute his death to his employment. A claim for compensation on behalf of his dependants has been received, but on present information there does not appear to be ground for payment of compensation. A gratuity will be payable under the Superannuation Acts. There is no record of a similar case in the Post Office.

Mr. THORNE: I take it for granted that the man in question was on duty at the time, and that being so, surely there is a moral obligation on the Post Office?

Sir E. BENNETT: He was on holiday.

Mr. THORNE: He was in your employ at the time.

Mr. RHYS DAVIES: In view of the fact that a similar case of death from anthrax occurred at Hull—the man was not in the employment of the Post Office—and they could not find the source of the infection, will the hon. gentleman be good enough to get into touch with the Home Office with a view to tightening up the restrictions upon foreign goat hair?

Sir E. BENNETT: That is rather a big order for me; but I can assure both the hon. Members, who have taken an interest in this sad case, that it is by no means closed.

Woman's Detention in West Park Mental Hospital

Mr. GROVES asked the Minister of Health if he would make inquiry into the case of a lady, Miss A. C. W., who, on July 22nd, 1932, was committed to West Park Mental Hospital from St. John's Infirmary, Battersea, the only allegation made in her certificate being that she stated that the police were the cause of her losing her job; that she thought they had put out their tongues at her, which she resented, and had prevented her earning her living; and, in view of the frivolous nature of such grounds for certification, would he ensure that a proper and complete investigation was made in all such cases before anyone was deprived of their liberty.—Sir HILTON YOUNG replied: The medical certificates contain other facts besides those mentioned in the question; and the report of the medical superintendent of the mental hospital, made within a few days of the patient's admission, confirmed the view that she needed care and treatment. If the hon. Member desires, I shall be willing to communicate to him, confidentially, further particulars of this patient's mental condition. I cannot accept the suggestion implied in the last part of the question, that a proper and complete investigation was not made in this case by the medical practitioner and the magistrate who dealt with it in accordance with the provisions of the Lunacy and Mental Treatment Acts.

THURSDAY, MAY 30TH

Precautions against Anthrax

Mr. RHYS DAVIES asked the Home Secretary whether his attention had been called to the recent deaths from anthrax at Chester and Hull; and, if so, whether it was possible to take greater precautions at the ports to prevent the spread of this disease.—Sir JOHN GILMOUR replied: Yes, sir, but I am afraid that the information at present available in these two cases does not suggest any further precaution which could have been taken at the ports. In neither case has it been possible so far to establish the source of infection.

Card Room Dust and Public Health

Mr. SUTCLIFFE asked the Home Secretary what progress had been made by the conference of representatives of employers and employees with regard to the provision of compensation in the event of damage to lungs caused by dust in card rooms in the cotton industry.—Sir JOHN GILMOUR replied: I am informed that after some preliminary discussions as to how best to deal with the matter both sides are now seeking certain further information with a view to discovering whether it provides a basis for a practical scheme.

Imported Liquid Eggs and Preservatives

Mr. GLOSSOP asked the Minister of Health if he had considered the reports of several public analysts, to which his attention had been drawn, to the effect that sulphurous acid was being used as a preservative for liquid eggs imported into this country; and what action he intended to take to put an end to this practice.—Sir HILTON YOUNG replied: I have recently received a document in which it is stated that one public analyst has found sulphurous acid in a sample of imported liquid eggs. The enforcement of the Preservatives Regulations is a matter for the appropriate local authorities, but I am making inquiries with regard to this case.

Stassanisation of Milk

BRIGADIER-GENERAL CLIFTON BROWN asked the Minister of Health whether his attention had been drawn to a report of the Danish State dairies on the system of stassanisation of milk as a more thorough and economic way of milk treatment than pasteurisation; and whether he would have inquiry made into this treatment.—Sir HILTON YOUNG replied: I am aware of the report referred to by my hon. friend. Stassanisation is a continuous flow process for the heat treatment of milk, and I am advised that pasteurisation by the holding process efficiently operated gives a greater assurance of the complete destruction of pathogenic bacteria than continuous flow processes.

National Health Insurance

Mr. SUTCLIFFE asked the Minister of Health whether, in view of the National Health Insurance Bill now before the House, he intended to make known to each one of the 200,000 persons affected thereby exactly what was proposed; and, if so, what steps to that end were being taken.—Sir HILTON YOUNG replied: Considerable publicity has been given through the press and otherwise to the proposals contained in the Bill now before the House, and in particular I am satisfied that they are now well known to approved societies, through whom the insured persons affected can obtain information with regard to the proposals. In the event of the Bill becoming law, steps will be taken to ensure that its provisions are made known by the approved societies to all the insured persons concerned.

Cause of Road Accidents

Sir JOHN POWER asked the Minister of Transport if he could state whether it was proposed to publish in respect of 1934 a detailed report on the cause of fatal road accidents similar to the report in respect of 1933.—Mr. HORE-BELISHA replied: A comprehensive analysis is being made of all fatal road accidents for the present year, and will be published.

The Selling Price of Milk

Mr. NOEL LINDSAY asked the Minister of Agriculture in how many districts the Milk Marketing Board had tested the elasticity of demand by varying the selling price of milk; and what was the result of these experiments.—Mr. ELLIOT: Milk is sold by wholesale on contracts covering the period October, 1934, to September, 1935, inclusive. The contracts do not provide for variation of the retail price of liquid milk, except that on the application of a majority of the retailers in any area the Milk Marketing Board may reduce the minimum appropriate retail price for that area. Reductions have been approved by the Board in about 280 areas, but I have no information so far as to what has been the effect on the demand. The arrangements now in force regarding the supply of milk at special rates to school-children have, I understand, resulted in a very considerable increase in the quantity of milk drunk in schools.

Cheap Milk for Hospitals

Captain PETER MACDONALD asked the Minister of Agriculture whether the Milk Marketing Board had

considered the possibility of arranging for the supply of cheap liquid milk to the hospitals by means of a scheme whereby all hospitals within a given area would undertake to combine to purchase a regular large daily quantity of such liquid milk; and whether he would urge the Board to deal with this matter as one of urgency.—Mr. ELLIOT replied: The position with regard to the price of milk supplied to hospitals was explained in the reply which I gave to my hon. friend the Member for Bolton, and the hon. Member for the St. Rollox division on May 2nd. I am sure that the Milk Marketing Board would at all times be willing to consider any scheme for the bulk purchase of milk which would be to the mutual advantage of producers and purchasers. Any proposals, such as those which my hon. friend indicates, which the hospitals may wish to suggest should therefore be made direct.

Mr. T. WILLIAMS asked whether the Milk Marketing Board had the power within the existing schemes to sell direct to institutions such as hospitals on the basis of any figures they might agree upon.

Mr. ELLIOT said he understood that in some cases hospitals had already combined in order to purchase milk supplies at the lower rates applicable to milk supplies sold wholesale or in large quantities.

Mr. WILLIAMS asked whether the Milk Marketing Board could sell direct to the institutions without retailers taking any part of the ultimate price.

Mr. ELLIOT: Obviously, that does not arise out of the question.

Infant Mortality in Kensington

Mr. JAMES DUNCAN asked the Minister of Health whether he was aware of the high infant-mortality rate last year in Kensington, 93 per 1000 births as compared with 59 per 1000 for England and Wales as a whole; and if he was satisfied that the Kensington borough council was taking all possible steps to reduce it.—Mr. SHAKESPEARE, Parliamentary Secretary to the Ministry of Health, replied: The answer to both parts of the question is in the affirmative. My right hon. friend understands that the borough council have recently decided to add two whole-time medical officers to their staff, with a view to the further development of the valuable work of the infant welfare centres.

Mr. DUNCAN asked if there was any evidence to show that the deaths of these young children were due to any particular cause, or that the deaths were confined to the children of any particular class, such as the unemployed.

Mr. SHAKESPEARE: No, none at all.

Mr. WEST asked if the hon. gentleman was aware that the death rate in the northern part of the division was 102 per cent., which was the highest in London, and that the chief factors in this terrible mortality were stated to be overcrowding, underground rooms, vermin, and high rents; and if that had not something to do with the borough council.

Mr. DUNCAN asked if it was not the case that the highest death-rate was in a ward of South Kensington, and not in North Kensington.

Sir W. DAVISON asked if the Minister was aware that many of the infants returned to swell this abnormally high death-rate were neither born in Kensington nor died there, and that it was only because of the method of registration of the Registrar-General that they were attributed to Kensington.

Mr. SHAKESPEARE said it was not for him to settle a dispute between the Kensington Members. The plain facts were that the housing conditions in Kensington were bad, and that there was a particularly active council in all matters of housing.

Earthquake at Quetta: Public Health Precautions

Sir S. HOARE, Secretary for India, replying to Mr. ATTLEE, made a statement with regard to the situation at Quetta following on the earthquake. He said that the Western Command had assumed control of the situation and were rationing the population. Arrangements were being made to send food and collect casualties in the villages neighbouring on Quetta. Evacuation was proceeding, and would continue so long as there was no outbreak or epidemic against which all possible precautions were being taken by the medical authorities. Patients were being treated in the Indian Military and Cantonment Hospital, where between 4000 and 5000 had been received up to Sunday evening. Refugee camps had also been established on the race-course. Supplies and personnel were being despatched by train and aeroplane from Karachi and Lahore, and the Viceroy had lent his aeroplane for this purpose. The Viceroy had inaugurated a Quetta Earthquake Relief Fund, and had issued an appeal in India, to which he was sure there would be a prompt and sympathetic response.

TUESDAY, JUNE 4TH

Glasgow Veterinary College

Mr. MAXTON asked the Secretary of State for Scotland whether, having regard to the work done by the Glasgow Veterinary College, he would place it on the same footing as the Edinburgh college as regards Government grants.—Sir GODFREY COLLINS replied: State grants were formerly given to the Glasgow Veterinary College, but as there did not appear to be a need for two State-aided veterinary colleges in Scotland, it was decided in 1923 to discontinue the grant to this college. The decision was subsequently supported by the majority of the Departmental Committee appointed in 1924 to consider and advise regarding the general organisation and finance of agricultural education and research in Scotland. I see no reason for departure from the decision then arrived at.

Malarial Commission in Palestine

Mr. THOMAS WILLIAMS asked the Secretary of State for the Colonies whether there was any likelihood of re-establishing the malarial commission in Palestine.—Sir PHILIP CUNLIFFE LISTER replied: The functions of the Malaria Unit which was, I understand, established under Jewish auspices in 1922, were gradually taken over by the Department of Health of the Palestine Government, and the Unit, as such, ceased to exist in 1930. I have no reason to doubt the adequacy of the staff of the Department of Health for their duties in connexion with anti-malaria measures.

JOINT TUBERCULOSIS COUNCIL.—At the May meeting of this council Dr. C. O. Hawthorne said that a feeding experiment would shortly be commenced in which it was proposed to feed 2000 children on raw milk and 2000 on pasteurised milk. Dr. W. Brand reported 20 participants at the post-graduate course held at Victoria Park Hospital at the end of February. Dr. Peter Edwards has held three courses this year at the Cheshire Joint Sanatorium and proposes a fourth, from July 2nd to 4th. Arrangements for the study tour in Denmark are approaching completion, and Brompton Hospital will give a course from Nov. 4th to 9th. Dr. E. Ward said he had conferred with the College of Nursing and the General Nursing Council about post-graduate study in tuberculosis for nurses. Dr. Tytler and Dr. Edwards promised a note for the next meeting on modern methods of sputum examination. It was suggested that the gasolene concentration method might prove more efficient than culture, as in 4 per cent. of specimens of TB+sputum the bacilli were dead.

NUTRITION ADVISORY COMMITTEE.—The Minister of Health and the Secretary of State for Scotland have appointed an advisory committee "to inquire into the facts, quantitative and qualitative, in relation to the diet of the people, and to report as to any changes therein which appear desirable in the light of modern advances in the knowledge of nutrition." The members are: Lord Luke (chairman), Mrs. Eleanor Barton, J.P., Mr. J. N. Beckett, Dr. G. F. Buchan, Prof. E. P. Cathcart, M.D., F.R.S., Mr. R. R. Enfield, Dr. J. Alison Glover, D. J. M. Hamill, Mr. A. Bradford Hill, D.Sc., Sir F. Gowland Hopkins, F.R.C.P., F.R.S., Dr. Donald Hunter, Prof. E. Mellanby, F.R.C.P., F.R.S., Sir John Boyd Orr, M.D., F.R.S., Mr. E. C. Ramsbottom, Mr. J. M. Vallance, Mrs. Chalmers Watson, M.D., Mr. J. R. Willis, and Mr. E. H. T. Wiltshire. The secretaries are:—Mr. W. J. Peete, of the Ministry of Health, London, S.W.1, to whom all communications on the subject should be addressed; Mr. N. F. McNicoll, of the Department of Health for Scotland; and Dr. H. E. Magee, of the Ministry of Health (medical secretary).

MEDICAL NEWS

University of Cambridge

Mr. D. H. Barron, of Yale University, has been appointed university demonstrator in anatomy for three years.

University of London

At a meeting of the senate on May 15th the Dunn exhibition in physiology was awarded to Raymond Dudley Blachford and the Dunn exhibition in anatomy was divided between Alan Graham Apley and Philip Henry Wood. Sir Ernest Graham-Little, M.P., was appointed to represent the university at the celebrations of the 300th anniversary of the University of Budapest (Sept. 25th to 28th), and at the ninth International Congress of Dermatology to be held in Budapest from Sept. 13th to 22nd.

Applications are invited for the Geoffrey E. Duveen travelling studentship in oto-rhino-laryngology and for grants for research in this subject. The Laura de Saliceto studentship for the advancement of cancer research has also to be filled, while the William Julius Mickle fellowship will be awarded to the graduate of the university who has done most to advance medical art or science within the last five years. Particulars of the three appointments may be had from the academic registrar.

A conference for medical officers in industry on leave from the tropics will be held at the London School of Hygiene and Tropical Medicine on July 9th and 10th.

At a meeting of the university court held on May 29th a resolution of thanks was passed to Messrs. Bovril Limited who have instituted at King's College two research studentships in physiology at £350 a year and will defray in addition the cost of the special materials, apparatus, and assistance needed.

Society of Apothecaries of London

A court dinner of the society was held on June 4th in the society's hall, when Dr. Wakelin Barratt, deputy master, presided. The occasion was the presentation to Sir Frederick Banting of the Society's gold medal in therapeutics. Sir William Willcox, senior warden, in presenting Sir Frederick to the deputy master, intimated in warm terms the significance of such a discovery as that of insulin, pointing out the part played in medical progress by such fruitful researches. Sir Frederick Banting, in reply, referred to the scientific activity of his university, the University of Toronto, and spoke eloquently of the closeness of the ties which bound Canada to the mother country in spite of the seductive opportunities offered in the contiguous United States. Sir Frederick Banting's words were received with general applause.

At recent examinations the following candidates were successful :—

MASTERY OF MIDWIFERY

Marie L. P. Crawford, Alice B. Field, Gwendolen E. Kaines, and Mary M. Mackenzie.

University of Wales

At recent examinations the following candidates were successful :—

TUBERCULOUS DISEASES DIPLOMA

Honoria Aughney, Elizabeth M. R. Garrigan, Dorothy M. James, R. A. N. McMath, Nora O'Leary, G. E. Ranawake, K. V. Rao, Amarnath Sah, M. E. Salem, Dhirendranath Sanyal, and A. L. H. E. Sayed.

Society for Relief of Widows and Orphans of Medical Men

At the annual general meeting held on May 22nd, Mr. V. Warren Low being in the chair, the report for 1934 was presented showing that during the year 57 widows and 9 orphans received relief. The sum of £2885 10*s.* was granted from ordinary funds, £1664 8*s.* from the Brickwell fund, £80 from the Copeland fund, and a Christmas present amounting to £640. The total income was £5405, total expenses £358. There are now 262 members of the society. Membership is open to any registered medical man who, at the time of his election, is residing within a twenty-mile radius of Charing Cross. Particulars from the secretary, at 11, Chandos-street, London, W.1.

Queen's University of Belfast

The senate of the University has decided to confer the honorary degree of LL.D. on Dr. T. G. Moorhead, regius professor of physic in the University of Dublin; and of D.Sc. on Dr. Thomas Carnwath, senior medical officer in the Ministry of Health, and Colonel W. P. MacArthur, deputy director-general of Army Medical Services.

Indian Medical Service

The annual dinner will be held at the Trocadero Restaurant on Wednesday, June 19th, at 7.15 for 7.30 P.M., when Major-General E. A. Walker, director of medical services in India, will take the chair. Officers can arrange to sit near their friends as separate tables will be provided. Application for tickets should be made to Sir T. Carey Evans at Hammersmith Hospital, Ducane-road, London, W.12, or to Mr. A. W. Brown, c/o Messrs. Grindlay and Co., 54, Parliament-street, S.W.

Royce Research Fellowships

The trustees of the will of the late Sir Frederick Henry Royce created two research fellowships, each of the value of £500 per annum, tenable for three years with a possibility of extension. The subject of investigation is to be the cause and cure either of influenza or of the common cold. It was arranged the University of London should recommend a selected applicant for one of the fellowships whilst the Victoria University of Manchester should act similarly in respect of the other. The trustees have appointed to the London fellowship Dr. Charles Herbert Stuart Harris, whose investigations will be carried out at the British Postgraduate Medical School, Hammersmith. No appointment has yet been made for Manchester.

Mental Hygiene Congress

The third European Mental Hygiene Reunion will be held in Brussels on July 20th and 21st, and it will be followed by a congress of medical alienists and neurologists under the auspices of the Belgian League for Mental Hygiene. The first subject for discussion will be the boarding-out treatment for mental patients, at which Dr. G. Corberi (Milan), Dr. F. Sano (Gheel Colony), and Dr. J. Vié (Áimay-le-Château Colony) will speak. The openers of the second discussion on punishments and restrictions in the family and in the school will be Dr. Heinrich Meng (Basle) and Dr. H. Crichton-Miller (London). The last session will be devoted to a discussion on mental hygiene and the press, to which Dr. O. L. Forel (Nyon) and Dr. J. van der Spek (Rotterdam) will contribute. Further information may be had from the secretary of the National Council for Mental Hygiene, 78, Chandos House, Palmer-street, London, S.W.1.

Liverpool Psychiatric Clinic

At the annual meeting of this clinic, held on May 23rd, at the Rushworth Hall, Miss Martha Jackson of Philadelphia spoke on occupational therapy in American hospitals and clinics, and Dr. R. G. R. Burrows described the work of the Maghull epileptic colony. During last year 232 new patients attended the clinic, making 1483 attendances. This total, although large, is limited solely by lack of staff, and a half-time medical registrar has now been appointed. Of the new patients 83 were women, 68 men 61 adolescents and 20 children; 63 per cent. of the cases were referred to the clinic by their own doctors; 35 per cent. of those attending the clinic are under 20 years. The cases fall roughly into five main groups—nervous disorder 95, mental disorder 56, behaviour disorder 38, mental deficiency 27, organic disease 16. The comparatively large proportion of cases of early mental disorder is regarded as satisfactory for three reasons. First, a proportion can at the outset be recognised as recoverable without resort to drastic measures. Secondly, cases likely to benefit from mental hospital treatment can be brought into touch with its possibility at an early date. Thirdly, there is evidence of a growing demand of the public for mental treatment. By virtue of its independent position the clinic can act as a liaison between the public and its medical service on the one hand and the mental hospitals on the other.

Microchemical Club

The fourth meeting of this club will be held at 11 A.M. on Saturday, July 13th, at the National Physical Laboratory. Lectures will be given by Prof. H. V. Briscoe, Prof. H. D. Kay, and Mr. L. J. Harris, D.Sc. The hon. secretary is S. J. Folley, National Institute for Research and Dairying, Shinfield, near Reading.

All-India Ophthalmological Society

The fourth conference of this society was held at Madras from April 22nd to 24th, under the presidency of Lieut.-Colonel R. E. Wright. The proceedings included a symposium on nutritional disorders of the eye. The discussion centred chiefly around keratomalacia or xerophthalmia, and contrary to views expressed by workers in England and elsewhere, it was held that skin rashes were not considered more frequent in cases of keratomalacia than in the general hospital population, with the exception of lichen pilaris. The same was true of pyogenic infections in general.

British Social Hygiene Council, Incorporated

The annual general meeting will be held during the Imperial Social Hygiene Congress at the London School of Hygiene and Tropical Medicine, Keppel-street, London, W.C.1. The presidential address will be delivered on July 8th, and will consist of a survey of 21 years' work. A business meeting will be held at 2 P.M. on Friday, July 12th. With the notice of these meetings there is a request for members to make known to others the holding of a summer school session at Cambridge. The school will be opened at Westminster College, Cambridge, on July 30th, and will be in session until August 6th; all communications concerning it should be addressed to the secretary of the Council, Carteret House, Carteret-street, London.

Fellowship of Medicine and Post-Graduate Medical Association

A week-end course in infectious diseases will be held at the Park Hospital, Hither Green, on May 15th and 16th, and a clinical and pathological course at the National Temperance Hospital at 8 P.M. on Tuesdays and Thursdays, June 11th to 27th. Other forthcoming courses include: chest diseases at the Brompton Hospital (5 P.M. on Mondays, Tuesdays, and Fridays, June 11th to July 8th); cardiology at the National Hospital for Diseases of the Heart (June 24th to July 6th); "refresher" courses at the Prince of Wales's Hospital (June 17th to 29th and July 1st to 13th); proctology at St. Mark's Hospital (July 1st to 6th); urology at the All Saints' Hospital (July 8th to 27th); medicine and surgery at the Southend General Hospital (July 13th and 14th); and dermatology at the Blackfriars Skin Hospital (July 15th to 27th). A panel of teachers is prepared to give individual instruction in various branches of medicine and surgery, daily. With the exception of the cardiology course, courses and clinics arranged by the fellowship are open only to members and associates. The secretary of the fellowship may be addressed at 1, Wimpole-street, London, W.1.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

FRIDAY, June 14th.

Ophthalmology. 5 P.M. (Cases at 4.30 P.M.) Annual General Meeting. Mr. G. T. Willoughby Cashell and Mr. A. Hugh Thompson: A Pedigree Congenital Optic Atrophy differing from Leber's Disease and embracing Four Generations. Mr. Eugene Wolff: The Use of Adrenaline in Atropine and Hyoscine Irritation.

Laryngology and Otology. 9.45 A.M. (Physiological Lecture Theatre, Bristol University), Mr. J. Morris: Electrical Hearing Aids. Mr. W. M. Mollison: Operative Treatment of Vertigo. Mr. C. S. Halipike: Recent Work on the Electro-physiology of the Mammalian Cochlea. 2.45 P.M., Clinical Meeting in the Out-patient Department at the Bristol Royal Infirmary.

Urology. Visit of the Dutch Urological Society. 10 A.M. (St. Paul's Hospital), Operations and Demonstrations. 2.30 P.M. (St. Peter's Hospital), Operations and Demonstrations.

SATURDAY.

Laryngology and Otology continued. 9.45 A.M. (Physiology Theatre, Bristol University), Mr. E. Watson-Williams: Affections of the Eyeball in Sinusitis. Discussion: Obstructions of the Trachea.

Urology continued. 10 A.M. (Middlesex Hospital), Operations and Demonstrations. 2.30 P.M. (All Saints' Hospital), Operations and Demonstrations.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, June 11th.—9 P.M. (Great Western Royal Hotel, Paddington), Dr. G. E. Oates: Some Housing Problems in Paddington.

RESEARCH DEFENCE SOCIETY.

WEDNESDAY, June 12th.—3 P.M. (London School of Hygiene and Tropical Medicine, Keppel-street, W.C.), Annual General Meeting. Sir Frederick Hobday: The Relief of Animal Suffering. (Stephen Paget lecture.)

SOUTH-WEST LONDON MEDICAL SOCIETY.

WEDNESDAY, June 12th.—9 P.M. (Bolingbroke Hospital, Wandsworth Common), Dr. Robert Hutchison: Constitutional Medicine. (Bolingbroke lecture.)

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.

THURSDAY, June 13th.—8.30 P.M. (11, Chandos-street, W.), Dr. A. Baldie: Homosexuality is Detrimental both to the Individual and to Society.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THURSDAY, June 13th.—8.30 P.M. (Kensington Town Hall), Prof. Edward Mellanby, F.R.S.: Proper Feeding, the First Essential for Good Physique and Health. (Cavendish lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, June 10th, to SUNDAY.—LONDON LOCK HOSPITAL, Dean-street, W. Afternoon Course in Venereal Diseases.—PARK HOSPITAL, Hither-green. Sat. and Sun., course in infectious diseases.—NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W. Clinical and Pathological Course, Tues., and Thurs., 8 P.M.—BROMPTON HOSPITAL, S.W. Course in chest diseases. Mon., Tues., and Fri., 5 P.M.—Courses of instruction and clinics arranged by the fellowship are open only to members and associates.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, June 13th.—2 P.M., Dr. W. W. Payne: Carbohydrate Metabolism. (3) Influence of the Ductless Glands. 3 P.M., Dr. A. A. Moncrieff: Congenital Heart Disease.

Out-patient clinics daily at 10 A.M. and ward visits (except on Wednesday) at 2 P.M.

INSTITUTE OF CHILD PSYCHOLOGY.

WEDNESDAY, June 12th.—6.15 P.M. (Friends House, Euston-road, N.W.), Dr. Alan Moncrieff: The Effect of Illness upon Temperament. 8.15 P.M., Dr. Margaret Lowenfeld: Play, Phantasy, and Experience.

INSTITUTE OF MEDICAL PSYCHOLOGY, Malet-place, W.C.

WEDNESDAY, June 12th.—3 P.M., Dr. H. Crichton-Miller: Frigidity. 4.30 P.M., Dr. Cedric Shaw: Sexual Difficulties.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.

WEDNESDAY, June 11th.—4 P.M. (St. James' Hospital, Ouseley-road, S.W.), Mr. J. P Monkhouse: Treatment of Suppurative Otitis Media.

INSTITUTE OF PATHOLOGY, St. Mary's Hospital, W.

THURSDAY, June 13th.—5 P.M., Dr. J. Henderson Smith: Virus Disease in Plants: a Comparison with Virus Disease in Animals.

UNIVERSITY OF BIRMINGHAM.

THURSDAY, June 13th.—4 P.M. (Medical Lecture Theatre, University, Edmund-street), Prof. K. Douglas Wilkinson: Acute Rheumatism and its Results. (First of two Ingleby lectures).

FRIDAY.—4 P.M. (Queen's Hospital), Prof. Bertram Lloyd: Demonstration of surgical cases.

Appointments

AINSWORTH-DAVIS, J. C., M.D. Camb., F.R.C.S. Eng., has been appointed Hon. Urological Registrar to St. Paul's Hospital, Endell-street, London.

BARRAN, G. F., M.B. Camb., Second Assistant to the Medical Superintendent at the Liverpool Sanatorium, Frodsham.

BENNETT-JONES, M. J., M.B. Liverp., F.R.C.S. Eng., Hon. Surgeon to the Bootle General Hospital.

DAVIES, A. L., M.R.C.S. Eng., School Medical Officer for Carmarthen.

LOWE, T. E., M.D. Melb., M.R.C.P. Lond., Medical Registrar at St. Mary's Hospital, London.

MCLENNAN, W. A., M.B. Glasg., D.P.H., Medical Officer of Health and School Medical Officer for Leigh, Lancashire.

OSLER, T. G., M.B. Cape Town, Medical Registrar at St. Mary's Hospital, London.

RUSHTON, M. A., M.B. Camb., L.D.S. Eng., Assistant Dental Surgeon, Guy's Hospital.

Certifying Surgeons under the Factory and Workshop Acts: Dr. D. M. HUGHES (St. Clears, Carmarthenshire); H. P. WILLIAMS (Anstey, Leicestershire); Dr. W. DEAN (Wivenhoe, Essex); Dr. A. J. Gibson (Brentwood, Essex); Dr. W. SHAW (Blairgowrie, Perthshire); Dr. R. J. TAIT (Towcester, Northamptonshire).

Vacancies

For further information refer to the advertisement columns

Aberdeen Royal Infirmary.—Sen. Res. M.O.

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

Aylesbury, Royal Buckinghamshire Hospital.—Sen. Res. M.O. £200. Also Second Res. M.O. £150.

Barnsley, Beckett Hospital and Dispensary.—H.P. £200.

Barnsley County Borough.—Asst. M.O.H., &c. £500.

Bath Royal United Hospital.—H.P. £150.

Bedford County Hospital.—First and Second H.S. At rate of £155 and £150 respectively.

Birmingham, Imperial Chemical Industries, Limited.—Asst. M.O. £500.

Birmingham University, Faculty of Medicine.—Lecturer in Bacteriology and Asst. Bacteriologist in Public Health Laboratory. £400.

Blackburn Royal Infirmary.—Res. Surg. O. £250. H.S. £175. Also Cas. O. £150.

Bolton Royal Infirmary.—Two H.S.'s. Each £125.

Bradford Royal Eye and Ear Hospital.—H.S. £160.

Brighton, Royal Sussex County Hospital.—Two Hon. Dental Surgeons.

Bristol General Hospital.—Two H.P.'s, two H.S.'s, Res. Obstet. O. H.S. to Spec. Depts. Also Cas. H.S. Each at rate of £80.

Bristol University.—Lectureship in Physiology. £400.

Bucks County Council.—Asst. County M.O. and M.O.H. £800.

Burnley, Municipal General Hospital.—Jun. Res. M.O. £150.

Cheltenham General and Eye Hospitals.—H.P. £200.

Chesterfield and North Derbyshire Royal Hospital.—Cas. O. and Fracture H.S. Also H.S. to Ear, Nose and Throat, and Eye Depts. At rate of £200 and £150 respectively.

Colchester Essex County Hospital.—Asst. H.S. £120.

Connaught Hospital, Walthamstow, E.—H.S. At rate of £100.

Derby, Bretby Hall, Orthopædic Hospital, near Burton-on-Trent. Locum Res. Asst. M.O. At rate of £350.

Doncaster Royal Infirmary.—H.S. to Eye and Ear, Nose and Throat Depts. £175.

Derbyshire Hospital for Sick Children.—Res. H.S. At rate of £130.

Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. Each at rate of £110.

Edinburgh Royal Infirmary.—Clin. Asst. in Dept. of Ophthalmology. £200.

Essex County Council Oldchurch Hospital, Romford, &c.—Asst. M.O. £600.

Fulham Borough Council.—M.O.H. £1,100.

General Post Office, Headquarters Medical Branch.—A.M.O. £500.

Grosvenor Hospital for Women, Vincent-square, S.W.—Gynæcological Surg.

Guildford Royal Surrey County Hospital.—H.S. £150.

Hampstead General and North West London Hospital, Haverstock Hill, N.W.—H.S. At rate of £100.

Harrogate Royal Bath Hospital.—Res. M.O. £156.

Hastings, Royal East Sussex Hospital.—Jun. H.S. At rate of £150.

Hertford County Hospital.—H.S. At rate of £180.

Hull Municipal Maternity Home and Infants' Hospital.—Jun. Res. M.O. At rate of £100.

Ipswich, East Suffolk and Ipswich Hospital.—H.P. £120.

Jersey General Hospital and Poor-law Infirmary.—Res. M.O. £100–£200.

Keighley and District Victoria Hosp.—Res. M.O. At rate of £180.

King Edward VII Sanatorium, Midhurst.—First Asst. M.O. £500.

King's College Hospital, Denmark Hill, S.E.—Asst. Physician.

Lambeth Hospital, Brook-street, Kennington, S.E.—Temp. Pathologist to assist Officer in Charge at Group Laboratory. At rate of £650.

Leeds City Hospital for Infectious Disease.—Med. Supt. £840.

Leicester, County Sanatorium and Isolation Hospital.—Jun. Res. M.O. £250.

Liverpool Royal Children's Hospital.—Hon. Physician.

London Hospital, E.—First Asst. to Gynæcological and Obstetric Dept. £250.

London Skin Hospital, Fitzroy-square, W.—Hon. Physician.

London University.—University Readership in Surgery. £800. External Examinerships. Chair of Dental Prosthetics at Guy's Hospital Med. School. £1000. Also University Readership in Anatomy. £550.

Maidstone, West Kent General Hospital.—H.S. £150.

Manchester Ancoats Hospital.—H.S. At rate of £100.

Manchester Ear Hospital, Grosvenor-square, All Saints.—H.S. Also Res. H.S. At rate of £150 and £120 respectively.

Manchester Northern Hospital, Cheetham Hill-road.—Res. M.O. Also Two H.S.'s. £150 and £100 respectively.

Manchester, St. Mary's Hospitals.—Two H.S.'s for Whitworth-street West Hospital. Also Two H.S.'s for Whitworth Park Hospital. Each at rate of £50.

Manchester, Withington Hospital, &c.—Jun. Asst. M.O. £200.

Marie Curie Hospital, Fitzjohn's-avenue, N.W.—Res. M.O. At rate of £100.

Mitcham, Surrey Wilson Hospital.—Res. M.O. At rate of £120.

National Temperance Hospital, Hampstead-road, N.W.—Cas. O. and H.P. At rate of £120 and £100 respectively.

Newcastle-upon-Tyne, Leazes Hospital.—Two H.S.'s. Each at rate of £100.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Res. Appointments. Each at rate of £50.

New Zealand, General Hospital, Auckland.—Sen. Surg. O. Also Sen. Med. O. Each £650.

Northampton, County Mental Hospital, Berrywood.—Med. Supt. £900.

Plymouth, Prince of Wales's Hospital.—H.P., Res. Anæsthetist. Also H.S. to Spec. Depts. Each at rate of £120.

Preston and County of Lancaster Queen Victoria Royal Infirmary. Special H.S. At rate of £150.

Princess Elizabeth of York Hospital for Children, E.—H.P. and H.S. Each at rate of £125.

Princess Louise Kensington Hospital for Children, St. Quintin-avenue, W.—H.S. At rate of £100.

Royal College of Physicians of London.—Leverhulme Research Scholarship. £500.

Royal Masonic Hospital, Ravenscourt Park, W.—Res. Surg. O. At rate of £250.

St. Mary's Hospital for Women and Children, Plaistow, E.—Pathologist. £200.

St. Peter's Hospital for Stone, &c., Henrietta-street, W.C.—Clin. Assts. to Hon. Staff.

St. Thomas's Hospital, S.E.—Hon. Registrar to Skin Dept.

St. Thomas's Hospital Medical School.—Demonstrator in Physiology. £400.

Salford Royal Hospital.—Two H.S.'s. Each at rate of £125.

Salisbury General Infirmary.—Res. M.O. £250.

Salvation Army, Mother's Hospital, Lower Clapton-road, N.—Two Jun. Res. M.O.'s. At rate of £80.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Hon. Surgeon to Out-patients. Also Registrar. £130.

Sheffield Royal Infirmary.—Two H.S.'s. One H.P. Aural H.S. Ophth. H.S. Also Asst. Cas. O. Each at rate of £80.

Shoreham-by-Sea, Sussex, Southlands Hospital.—Asst. M.O. £300.

Somerset and Bath Mental Hospital, Cotford.—Second Res. Asst. M.O. £350.

Southend-on-Sea County Borough.—Med. Supt. for Council's Infectious Diseases Hospitals. £750.

Southend-on-Sea General Hospital.—H.S. to Orthopædic and Cas. Dept. £100.

Stafford, Staffordshire General Infirmary.—H.P. and Cas. O. At rate of £150.

Stirling District Mental Hospital, Larbert.—Jun. Asst. M.O. £300.

Swansea Cefn Coed Hospital.—Asst. M.O. £350

West Bromwich, Hallam Hospital.—Res. H.P. At rate of £200.

West London Hospital, Hammersmith-road, W.—Cas. O. £250. Also H.P. and 2 H.S.'s. Each at rate of £100.

West Riding Mental Hospital, Wakefield.—Fifth Asst. M.O. £350.

Weston-super-Mare General Hospital.—Res. H.P. £150.

Wigan Royal Albert Edward Infirmary and Dispensary.—Res. Med. and Surg. O. and Reg. £250. Also H.S. At rate of £150.

Willesden General Hospital, Harlesden-road, N.W.—Res. Cas. O. At rate of £100.

Windsor, King Edward VII. Hospital.—Res. M.O. £150. Also Three H.S.'s. Each at rate of £100.

Wolverhampton, Royal Hospital.—H.S.'s. Asst. Res. M.O. Each at rate of £100. Also H.P. At rate of £125.

Worksop, Victoria Hospital.—Sen. H.S. At rate of £150.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Medbourne (Leicestershire), Portree (Invernesshire), Furnace (Argyllshire). Latest date for receipt of applications June 18th.

Births, Marriages, and Deaths

BIRTHS

BIRCH.—On May 24th, at the Royal Infirmary, Liverpool, the wife of C. Allan Birch, M.D. Liverp., of Hazelwood-court, N., of a son.

HORDER.—On May 25th, at Tunbridge Wells, the wife of Cecil A. Horder, F.R.C.S. Eng., of a son.

MCMICHAEL.—On May 19th, at Vowchurch, Herefordshire, the wife of G. B. McMichael, M.R.C.S. Eng., of a son.

MICKS.—On May 29th, the wife of W. T. Micks, M.B. Dub., of Hull, Yorks, of a son.

MORGANS.—On May 21st, at Bristol, the wife of C. Christopher Morgans, M.R.C.S. Eng., of a son.

RENNIE.—On May 27th, at Colombo, Ceylon, to Jean Marcella Rennie, M.B. Edin., wife of Gilbert McCall Rennie, M.C., Ceylon Civil Service—a son.

WILLIAMS.—On May 30th, at Devonshire-place, W., the wife of Leslie Williams, M.D., M.S. Lond., of a son.

MARRIAGES

GOODCHILD—BARHAM.—On May 14th, at Kabale, Uganda, Roy Theodore Scovel Goodchild, M.B. Lond., to Muriel Mary, elder daughter of the late Harold Barham, of Wimbledon.

DEATHS

BEVAN.—On May 22nd, 1935, Richard Bevan, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H., and Gold Medallist, of 2, Park-avenue, East Sheen, S.W.14, aged 81 years.

BRECHIN.—On May 31st, at the Bensil, Carnoustie, the residence of his brother-in-law, William Adam Brechin, M.C., M.B. Glasg.

HABGOOD.—On May 24th, at Clifton, Bristol, Henry Habgood, V.D., M.D. Brux., late of Eastbourne, in his 87th year.

PURKIS.—On May 30th, at Guy's Hospital, Kenneth Noel Purkis, M.C., F.R.C.S. Eng., of Beckenham, aged 42.

RECKITT.—On May 27th, at Thames Ditton, Lieut.-Colonel John Dennis Thorpe Reckitt, late R.A.M.C., aged 80.

ROSE.—On May 30th, in a London nursing-home, Frank Atcherley Rose, F.R.C.S. Eng., late of Wimpole-street, W.

SHACKLETON.—On June 1st, at Bushey, William Webb Shackleton, M.D. Dub., aged 67.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

UNFIT HOUSES

A CREDITABLE commentary on Part II. of the Housing Act, 1930, which deals with the repair or demolition of individual insanitary houses, has been compiled by Mr. H. G. Clinch, F.S.I.A., and Mr. B. G. Bannington.[1] In considering the need of defining "fitness," they state that the position is so unsatisfactory that at the Sanitary Inspectors' Conference, 1934, the opinion was expressed that "minimum standards of fitness should be laid down by housing legislation." Yet on the preceding page the authors themselves admit that "what (standard) would be normal and reasonable in a big town would be infrequent and perhaps impossible in many villages." The authors apparently realise the impossibility of laying down hard-and-fast standards for the country generally.

A number of pages are devoted to standard specifications dealing with repairs and alterations to dwelling-houses, and the reader is invited to follow the "procedure set out with appropriate variations when dealing with houses under Sections 17, 19, and 20 of the 1930 Act." These specifications deal with practically everything in a dwelling-house from the chimney-pots down to the foundations, but omit reference to ventilated food storage accommodation, vermin, and paintwork; yet food must be stored somewhere, preferably in a cool ventilated place; houses should be free from vermin; and paint is necessary to preserve and maintain dwellings in proper condition. In their prefatory remarks, the authors state that Part II. is "full of pitfalls into which even the wariest may slip." Lest this and other comments should discourage inexperienced officers from making use of valuable legislation, it is important to emphasise the fact that sufficient experience of this legislation has been obtained and made available in "case law" and elsewhere, to enable officers of local authorities to use with success this strong weapon against bad housing conditions.

ALLERGIC DERMATOSES

A TENTATIVE classification of allergic dermatoses is suggested by Sulzberger, Wise, and Wolf, who illustrate it in schematic and tabular form (Jour. Amer. Med. Assoc., April 27th, 1935, p. 1489). The first three groups in their classification relate to the eczematous, the tuberculin and the urticarial reactions. Each has its particular "shock tissue," its type of lesion, time factor, and characteristic test—e.g., the patch and scratch tests. They point out that there tends to be a common factor in the causative agents in each group; thus substances producing eczematous reactions tend to be keratolytic or to have an affinity for epidermal tissues. The fourth group is a miscellaneous one, including drug and other reactions, and awaits further elaboration. The authors themselves would probably agree that no such classification can be rigidly adhered to, but it is likely to be helpful as indicating certain broad features in these reactions and in pointing to lines of investigation.

PRESCRIBING IN BRISTOL

A PHARMACOPŒIA, issued jointly by four Bristol voluntary hospitals, contains a comprehensive range of formulæ. It has been revised in accordance with the B.P. 1932 and brought up to date. The ingredients are given in full Latin and the quantities in the imperial system, with no mention of metric equivalents, even for substances like neoarsphenamine and sulpharsphenamine which are always prescribed metric. The formulæ are a curious mixture of ancient and modern. Mistura Coryzæ (p. 24) contains ten different ingredients, a perfect example of polypharmacy, and the formulæ for Mist. Acid. Acetylsalicyl. Citrata, Pulv. Strontii Lactat. Co., and Syrup. Camph. Co. appear unnecessarily complicated. On the other hand, the salicylic ester of dihydroxy-ethane ("S.E.D."), a comparatively new synthetic, is given a short monograph to itself and is used in two liniments. Only two formulæ for compressed tablets are given and 19 for pills. This is against the trend of modern hospital practice where pills are being largely displaced by tablets. The section entitled Treatment of Poisoning is excellent, but it is rather startling to see sulphonal and trional included here among the barbiturates. A list of synonyms would have been more useful if the well-known trade names were alphabetised rather than the lesser known chemical names. Mistakes are rare and trivial and the booklet contains much of value for the practitioner. It is printed for private use but may be had (3s.) from the secretaries of the Infirmary, Hospital, Children's Hospital, and Eye Hospital.

CIRCULATION AND LUNGS

AT the eighth meeting of the Deutschen Gesellschaft für Kreislaufforschung, held at Wiesbaden in March, the communications included a number of interesting papers on the physiology of the circulation. In particular, problems of the relationship of respiration to the cardiovascular system were discussed. W. R. Hess (Zürich), speaking on the respiratory changes brought about by changes of blood pressure acting through nervous stimuli from the heart, aorta, or carotid sinus, emphasised that the respiratory centre cannot be regarded as the only primary governing control for the regulation of respiration. M. Hochrein (Leipzig), dealing with œdema of the lung, stressed the need for treatment of the respiratory mechanism, and of the nervous system. With other speakers he referred to the beneficial effects of luminal in this condition. The numerous important reflex effects upon the circulation from other organs were exemplified by the account of the "feeding reflex" which leads to an increase in the cardiac output after the intake of food. E. Reinhardt (Berlin) described atelectasis, or collapse of lung, as mainly due to reflex contraction of the muscle-fibres in the lung tissue, and emphysema as a widening of the alveoli and acini following a lowered excitability of this muscular tissue. In the former the result was hyperæmia with exudation and fibrosis; in the latter it was ischæmia with actual disappearance of alveolar walls. Acute massive collapse he regarded as a nervous contraction of the bronchial muscle of reflex origin.

Among a number of other subjects considered may be mentioned the use of carbon dioxide for intermittent claudication and endarteritis. A favourable report was given on the effect of this gas injected subcutaneously in such conditions.

T.C.P. B^3 COLLOIDAL EMULSION (British Alkaloids Ltd., Winchester House, London, E.C.).—Some five years ago a note on this preparation was made in THE LANCET, and a later reference to the contents and doses of the preparation will be found in our columns of April 23rd, 1932, p. 918. We have now received from the manufacturers three brochures, setting out that the emulsion has been found of value in the treatment of bacillary dysenteries and intestinal toxæmia, while with a slight alteration in composition it has proved of service in the rheumatoid diatheses. This would be expected, as disinfection of the intestinal tract is a regular procedure in the treatment of many conditions which fall under the denomination of rheumatic or rheumatoid. In all three brochures there is careful reference to recognised authority for the statements and deductions.

[1] Unfit Houses: A Guide to Part II. of the Housing Act 1930 for Local Representatives and Officers. By H. G. Clinch, F.S.I.A. M.R.S.I., and B. G. Bannington. London: H. K. Lewis and Co., Ltd. 1935. Pp. 78. 3s. 6d.